Birth Through Kindergarten (B–K)

Colorado Communication Guidelines

DRAFT FOR PEER REVIEW

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Cover photo: Mollie, age 4 years, reading to twins, Alex and Abbey, age 4 months.

Table of Contents

IV. Intervention

V. Appendices

Introduction

EARLY IDENTIFICATION of communication disabilities in young children is a challenging, multifaceted, and dynamic responsibility for speech-language pathologists (SLPs) and related educational professionals. Several decades of educational research provide undeniable connections between appropriate early identification and intervention of speech and language disorders in improving later academic and social success of children from birth through kindergarten. Without exception, the complex needs of children and families necessitate a multidisciplinary approach, which is responsive to developmental, cultural and linguistic variability. Now more than ever before SLPs play a crucial role on interdisciplinary teams, identifying and working with young children, in a variety of settings. Therefore, it is imperative that SLPs contribute to the development and implementation of evidence-based practices within child care settings, school districts and Boards of Cooperative Services (BOCES) across the state of Colorado. This helps ensure that Colorado's youngest children receive the most effective interventions to prepare them for educational success. The primary purpose of the Birth through Kindergarten Colorado Communication Guidelines is to assist SLPs in their collaborative teaming efforts with early childhood educators, parents of young children with communication needs, and related professionals involved in identifying and meeting the needs of all children in early learning environments.

National legislation including the recent reauthorization of IDEA and the No Child Left Behind Act (NCLB) have delineated the significance of prevention activities and early identification of children at risk of academic failure. The American Speech-Language-Hearing Association (ASHA) has attempted to clarify the varied roles of SLPs in prevention and early identification activities, as well as, continue to meet the traditional evaluation responsibilities required through federal and state mandates. Special emphasis has been placed on the role of SLPs in early literacy interventions, especially in the development of oral language skills, which have been recognized as the most basic foundation for literacy development. Many states, including Colorado, have revised their licensing standards for SLPs to correspond to the rising awareness of the critical nature of language in early childhood. Research shows that waiting to identify children with communication disabilities until they are in kindergarten is an outdated and ineffective model (ASHA, 1999).

Existing Colorado Communication Guidelines for Speech-Language Assessment and Eligibility (CDE, 2001)

Recognizing the diverse nature of children with disabilities across Colorado and the many roles of the SLP, the Colorado Department of Education sponsored the creation of the Guidelines for Students with Communication Needs in 1995. This document, with the original Severity Rating Scale, was developed and reviewed by SLPs across Colorado to serve as the first statewide, systematic approach to identifying students with communication disabilities. Prior to 1995, the speech-language criteria was inconsistently interpreted on a district-by-district basis, causing confusion as students moved within and across school districts in Colorado.

The Guidelines were updated and redistributed in 2001 by the Speech-Language Advisory Council, a statewide body sponsored by CDE. The distribution of the updated Colorado Guidelines for Speech-Language Assessment and Eligibility and the Communication Rating Scales was followed by intensive trainings across the state. The 2001 document was intended primarily for assessment and eligibility of school age students 5 through 21 years. It was considered to be applicable to children age 3 to 5 years with significant professional judgment from the SLP. As the Guidelines were implemented, feedback from SLPs working in early childhood settings strongly advocated for the development of a companion document specifically addressing children ages birth through five. The Birth Through Kindergarten (B–K) Colorado Communication Guidelines are intended to fulfill that need and serve as a companion document to the 2001 Colorado Guidelines for Speech-Language Assessment and Eligibility and the Communication Rating Scales.

Primary Purpose of This Document

This document is designed to provide guidelines on evidence-based practices for prevention, identification, and intervention of communication disorders in young children birth through kindergarten. It is not designed to be an exact formula for determining eligibility, length or frequency of intervention. Rather, it is a tool to guide professionals working with the early childhood population in making informed decisions based on ongoing data collection, developmentally appropriate practices and research based evidence. As a resource for SLPs, this document is intended to ensure that young children, between the ages of birth through kindergarten, receive appropriate early communication intervention services consistent with individual needs and inclusive of developmental, educational and family concerns.

Secondary Purposes

Additionally, these guidelines will provide:

- **Criteria for the identification of communication impairment, related to typical developmental milestones,** which may guide early intervention and educational teams in identification of appropriate school, community and family resources for effective interventions and positive outcomes. Examples of communication-based clinical clues, which may impact future educational achievement (i.e. pre-literacy and literacy) are outlined and supported by research-based indicators.
- **Effective early identification practices** which are developed and utilized for infants, toddlers, preschoolers and kindergarteners who are at risk or suspected of evidencing a communication disability.
- **Recommendations for multidisciplinary evaluations and assessment** which are developmentally, culturally, and linguistically sensitive, and are coordinated to determine communication strengths and needs of children birth through kindergarten.
- **A continuum of collaborative teaming responsibilities** developed for the SLP in the provision of early intervening services and prevention activities for children birth through kindergarten.

I. An Overview of Communication

What is Communication?

Communication is the process used to exchange information with others and includes the ability to **produce** and **comprehend** messages. Communication includes the transmission of all kinds of messages, including information related to needs, feelings, desires, perceptions, ideas, and knowledge. Communication also occurs through a variety of modalities, including non-linguistic, verbal and paralinguistic processes. All of these processes influence an individual's ability to communicate with others (New York State Department of Health, 1999 p. 21–23).

- *Non-linguistic processes* include gestures, body posture, facial expression, eye contact, head and body movement, and physical distance.
- *Verbal communication* pertains to the use and comprehension of words, and includes the ability to formulate and produce words and sentences (spoken, signed or written) with appropriate vocabulary, grammar, and use of conversational rules.
- *Paralinguistic processes* include affective (emotional), social, and interpersonal modifications to language used for communication. For example, in English, a rising intonation contour can be used to signal a question and a change in emphasis can be used to signal new information.

Language, an integral part of human communication systems, is also a mechanism to control and mediate one's own actions, thoughts and behaviors. Although language and speech are sometimes thought of as inseparable, they are, in fact, different.

- *Language* is a rule-based system of symbolic communication involving a set of small units (syllables or words) that can be combined to yield an infinite number of larger language forms (phrases and sentences). Language must be filtered through some modality, most commonly oral and aural (speech and hearing), but other modalities can also be used (such as manual and visual in American Sign Language or manual and visual in reading and writing). *Literacy* is defined as "an individuals ability to read, write, and speak in English and compute and solve problems at levels of proficiency necessary to function in society, to achieve one's goals and to develop one's knowledge and potential. Literacy encompasses reading, writing, speaking listening and thinking" (*National Literacy Act,* 1991 Section 3).
- *Speech* is the method of verbal language communication that involves the oral production and articulation of words. Speech is the result of specific motor behaviors and requires precise neuromuscular coordination of respiration, phonation, resonance, and articulation systems. Speech requires producing the sounds of speech and combination of sounds, as well as, voice quality, intonation, rate, and fluency.

What is Typical Communication Development?

Communication is integral to overall developmental progress in young children, particularly in the cognitive, social-emotional, and adaptive development. Human newborns enter the world with limited but functional repertoires of behaviors that serve as communication signals to attentive caregivers. Communication begins in the earliest days of infancy when babies and caregivers "take turns" in their first "conversations" of looking, vocalizing and gesturing. For example, an infant's cry is usually a sign of distress; smiles and coos signal pleasure; and hand sucking may signal hunger.

A number of studies (Spear, J. & Gerber, S., 1987; VanKleek, A., 1990; add more citations here and include all in the references) of young children have identified important milestones in communication development that are typically obtained in the first six years of a child's life. Typically developing young children demonstrate many rich gestural and social prelinguistic (before verbal language production) communication routines prior to the onset of first words. Important prelinguistic behaviors in the first year of life include:

- *Joint attention* (the baby and caregiver look or attend to the same item; for example, the baby points to a toy and actively engages the caregiver in looking at or playing with the toy)

- *Gestural communication* (the baby raises hands up to be picked up or points to a desired object and looks back at the caregiver to wait for the object)
- *Turn-taking during social routines* (child participates in games such as "peek-a-boo" and "pat-a-cake")
- *Imitation* (child imitates the language modeled by the adult caregiver)

The production and use of words emerges later in development, usually during familiar routines and with familiar adults (i.e, "bye-bye," "mama"). As young children move into the "intentional language stage" both language comprehension (what the child understands) and language production processes become evident. Typically in young children developing language skills (NY Guidelines, 1999), comprehension skills exceed language production skills. As speech and language skills develop they form the listening and speaking foundations for reading and writing skills that underlie later developing academic disciplines. This systematic progression of vocal and language development is characterized briefly below. (For more specific developmental markers See Communication Milestones p. 22).

Dr. Kenn Apel writes in *Beyond Baby Talk*, "Language is a rich complex adaptable system. It's the way we combine sounds, words, signs, and sentences to communicate our thoughts and understand others. Language is how we, as humans, socialize and learn." These first six years are filled with speech and language expectations and changes that will form the foundation of a lifetime of communication. The stronger this early foundation, the stronger the developing speech and language skills. As we view a chronological summary, there is a bridge created to every aspect of life (Apel & Masterson, 2001).

During the first year, the child's vocalizations gradually become more refined, better controlled, and more focused on the sound characteristics of the language in the environment. Also, children exhibit understanding (comprehension) of words and some phrases, production of first words, and the beginnings of communicative abilities (turn-taking; requests for objects or actions and statements using vocalization, eye contact and gesture).

During the second year of life, children's comprehension and production abilities expand. Vocabulary increases, gradually at first, and then rapidly around 18 months. Comprehension of vocabulary is extended and expanded swiftly. Comprehension and production of syntax (words combined in phrases) both emerge during this period. Communicative intents also unfold so that children initiate communicative exchanges and readily participate.

By three years of age, children have acquired all the rudiments of language. Their average sentence length is approximately three to four words, with the emergence of longer, more complex sentences. Three year olds are beginning to be sophisticated conversationalists, able to maintain a topic of conversation, add information and initiate topics. They also can describe complex events and past experiences. People outside the family can understand the child (ASHA, 2003).

By four to five years of age, the young child can pay attention to short stories, answer simple questions, formulates sentences with adult-like grammatical structures, can string together ideas in an understandable sequence and communicates effectively with adults and other children. At this point the foundations of phonological awareness are being formed. At four years the child is starting to segment words into syllables (there are two parts to base/ball.) and about 50% of the four year olds can count the clapped syllables in words (te-le-fone = 3). At five 50% of five year olds can count the sounds in simple words.(c-a-t = 3). Most of the sounds are fully developed and pronounced correctly (ASHA, 2003).

By five to six years of age, children have a broader knowledge of sound systems. When children gain phonological awareness they are able to manipulate sounds and sound units to create words, segment words into sounds, and recognize similarities and differences between sounds. These skills are the underpinnings of literacy development (Catts, 1993). At this age, children are learning not only about spoken language, but also about written language. Children at this stage begin to use language in different ways to develop vocabulary and implement social skills (Apel, K. Masterson, J. *Beyond Baby Talk*, ASHA, Premier Publishing, 2001)

What is a Communication Disorder?

The American Speech-Language-Hearing Association (ASHA) defines a communication disorder as:

"An impairment in the ability to receive, send, process, and comprehend concepts or verbal nonverbal and graphic symbol systems. A communicative disorder may be evident in the processes of hearing, language and/or speech. A communication disorder may range in severity from mild to profound. It may be developmental or acquired. Individuals may demonstrate one or any combination of three aspects of communication disorders. A communication disorder may result in a primary disability or it may be secondary to other disabilities." (ASHA, 1993).

Communication disorders may range from a rather mild substitution of sounds to an inability to use language or speech. Communication disorders in a young child may be characterized by delays, interruptions and/or atypical development in one or more of the following areas: Articulation/Intelligibility, Phonology, Fluency, Language Comprehension, Language Production (Oral/Written language, Semantics, Morphology, Syntax), Voice, and Pragmatics. See full descriptions in the Appendix B.

How common are communication disorders?

ASHA estimates that 42 million Americans have some type of communication disorder. Communication disorders can occur in isolation or they may co-exist with other developmental disorders such as mental retardation and autism spectrum disorder (17% of children in US under the age of 21 have a developmental disability). In young children communication represents the most common developmental problem. Using ASHA's definition it is estimated that between 15 and 25 % of young children have some type of communication disorder. **(NY Guidelines, 1999).** 8% to 9% of children have difficulty producing speech sounds and between 1 to 19% of preschool age children have language difficulties. 4% to 5% of children between the ages of 2 to 4 years experience incidence of stuttering. ***(Need to update with 2004 data)***

What are the causes of communication disorders?

Frequently, the specific cause of a communication disorder is unknown. Some common problems which co-exist with communication disorders include cerebral palsy and other nerve/muscle disorders, traumatic brain injury, stroke, viral diseases, mental retardation, drug effects, structural impairments such as cleft lip or palate, vocal abuse or misuse, or inadequate/lack of speech and language models (ASHA, 1998). A list of medical conditions that are commonly associated with communication disorders in young children is given in the section on risk factors in Chapter III.

When do communication disorders begin?

Children begin to develop the communicative skills that form the foundation of language in very early infancy, long before they begin to produce their first words and sentences. The most severe communication disorders in young children are usually associated with other developmental disabilities or severe hearing loss/deafness and are usually noticed as part of delayed development during infancy. These children may be delayed in cooing and babbling, be generally unresponsive to communication routines with their caregivers or may have severe feeding problems which may be associated with later difficulty with oral motor coordination necessary for speech sound development. Other speech and language disorders (such as language impairment, stuttering, voice dysfunction, problems with articulation, or lesser degrees of hearing loss) typically cannot be observed until after the child begins to talk. **Delayed or limited production of words may be the first indicator of a communication/literacy disorder in some children** (Apel & Masterson, 2001).

Can a child develop a communication disorder after a period of apparently normal language development?

Children who are delayed in the acquisition of speech and language skills usually follow a typical pattern of development but at a slower rate than children who are not delayed. Any marked regression or loss of language or other communication skills requires a comprehensive medical, neurological, psychological, and audiological evaluation to rule out possible contributing factors

such as seizure disorders, degenerative syndromes, progressive hearing loss, or other brain-based abnormalities, or severe social-emotional trauma. There is a sub group of children (generally aged 18–36 months) who experience a period of typical language followed by a regression in communication skills. Apparent regression in communication skills can occur in young children as a result of specific medical conditions or medical syndromes (Autism Spectrum Disorder) *ADD citations here.*

Do children "outgrow" communication disorders?

Although the stages that a child passes through tend to be generally consistent, there are other factors that impact the speed of that development and the age that a child reaches various milestones. Factors such as a child's inborn ability to learn language, the amount and kind of language that a child hears, and the response to that child's communication effort can all effect the pace of acquisition. These factors make it difficult to predict where a child's language skills may be 4 months or a year from the present. Young children, who have communication disorders secondary to, or co-occurring with, developmental disorders, syndromes, or other specific medical conditions, do not "outgrow" these communication disorders. Appropriate interventions often help to improve their language skills but it may not completely eliminate the disorder. Some young children described as "late talkers," who have not demonstrated delays in other areas of development, but who evidence expressive language delays may appear to "catch-up' with their peers in the preschool or early school years.

There are however certain factors that increase the risk that a late talking child may experience a continuation of a language problem A child who demonstrates communication delays as a toddler and preschooler is at greater risk for later language learning disabilities, including reading disabilities (citations here). Even children with problems correctly processing the sounds of speech (phonemes) (a phonological/articulatory disorder) are children with an early appearing communication disorder. Longitudinal studies have documented that the same problem with processing (understanding, perceiving, and being able to retrieve the speech sounds from one's store of information) is likely to manifest as a reading disability (a language based learning disability) (Shaywitz, 1998). Additionally, children with limited expressive language and few gestures to support communication attempts are less likely to "catch up" with peers (citation here). A final consideration is steady progress in terms of quantity and quality of language noted in a child's communication efforts. New words and new purposes for language should occur at least every month. A child's language development can be slow but should be continuous and expanding. Last but not least it should be noted that the presence of specific risk factors increases the potential for developing a communication disorder but does not necessarily mandate its presence.

What is the influence of a communication disorder on a young child?

Communication is essential to playing, thinking, learning, and engaging in social interaction throughout every aspect of a child's life. Impaired communication may impact a child's social and emotional skills, cognitive skills and the acquisition of academic skills. **Even if a delay is transitory, a communication delay at a young age may negatively influence a child's overall development.**

What are the Types of Communication Disorders?

ASHA categorizes communication disorders into three major categories with their accompanying subtypes.

Language Disorders

Language is a code that we learn to use in order to communicate ideas and express our wants and needs Reading, writing understanding speaking and some forms of gesture are all forms of language. Language includes the meaning of words (semantics), the way words are ordered (syntax) and the way words are used to convey a message (pragmatics) A Language *disorder* refers to impaired comprehension and/or use of spoken, written and/or other symbol systems. Language disorders include any delay or disability affecting the child's ability to comprehend (receptive language) and/or appropriately use words or gestures (expressive language). The disorder may involve any of the following in any combination:

1. The form of language (phonology, morphology, syntax)
2. The content of language (semantics)
3. The function of language in communication (pragmatics) (See Terminology Appendix for more complete definitions)

In general, language disorders can be grouped in the following categories of co-existing conditions.

- Disorders associated with global cognitive deficits
- Disorders associated with Autism Spectrum Disorders (ASD) and other developmental disorders
- Disorders associated with hearing impairments
- Disorders associated with social/environmental factors
- Disorders NOT associated with other impairments or disabilities

Young children with cognitive delays, Autism Spectrum Disorder (ASD) and other developmental disabilities almost always experience general delays in their language development. The severity of these language disorders usually varies according to the severity of the child's primary disability.

In some young children with language impairment, only expressive language seems to be affected, whereas, others show impairments in both receptive and expressive development. The severity of these impairments ranges from a mild delay in the emergence of spoken words of the use of specific grammatical forms to severe delays and language learning disabilities that persist throughout the child's school years and significantly influence both academic and social success. Studies involving large samples of children with language impairment have shown a consistent gender effect with a disproportionate percentage of boys (ranging from 67% to 84%) found in all studies (Whitehurst, Fischel, Arnold and Lonigan, 1992).

It also seems likely that there are multiple risks including chronic otitis media, genetics, socioeconomic status (Hart & Risley, 1995), and speech perception deficits that act in **cumulative fashion** to increase the likelihood that any one child will demonstrate language impairment. The degree and pervasiveness of any communication impairment can be directly associated with the **number of risk factors involved.** A summary of the communication components associated with language skills is provided in Table 1.

Table 1: Oral and Written Receptive and Expressive Language Components.

	Listening Receptive	Speaking Expressive	Literacy Reading Writing
Form (phonology, morphology, syntax)	Applies phonological, morphological, and syntactic rules to comprehend and understand oral language	Uses rules (phonological, morphological, and syntactic) in words and sentences correctly in conversations with increasing length and complexity.	Demonstrates an emergent awareness and appreciation of print and literacy materials
Content (Semantics)	Understands the meaning of words and spoken language	Conveys intent and needs through oral or gestural language. Formulates thoughts into oral language. Develops vocabulary for language purposes.	Begins a developing awareness that print, graphemes and environmental signs have meaning and purpose and reciprocal response by written attempts.
Function (Pragmatics)	Follows directions. Understands social meanings	Uses appropriate language for the social context. Takes turns in listener/speaker role	Understands mood, tone, style, context, and perspective of shared literature.
Cognitive Communication Components	Attention, long-and short-term memory, problem solving, and related components		

Speech Disorders

Speech is a fine motor activity to produce sounds involving the coordination of the lips tongue vocal folds the vocal tract and respiration. These sounds form the basis of words that are used for the purpose of communication. There is a generally accepted sequence of development of sounds that can vary child to child. (See Appendix Speech Sound Development) Let's include several different charts or resources here. Speech disorders may be impairments of articulation/phonology/fluency/or voice/resonance. Impairment of any of these categories may have a negative effect on general educational/developmental progress if the disorder is distracting enough to interfere with the speaker's message. Focused assessment that identifies specific areas of need assists eligibility and intervention decisions.

Articulation/phonology. An articulation or phonological disorder is "the atypical production of speech sounds characterized by substitutions, omissions, additions or distortions that may interfere with intelligibility" (ASHA, 1993a, p. 40) Accurate production of speech sounds relies on the interplay of phonemic, phonological, and oral-motor systems. Generally the term articulation refers more specifically to the production of the sounds that impact the clarity of the communication. This frequently has an underlying motor component. In these cases the child is often unable to produce the correct sound even when provided with an imitative model. Orofacial-myofunctional treatment may be conducted to improve or correct the student's orofacial myofunctional patterns and related speech patterns. Orofacial myofunctional intervention may include alteration of lingual and labial resting postures, muscle retraining exercises, and modification of processing and swallowing solids, liquids, or saliva and may be conducted concurrently with speech-language intervention.

The term phonological disorder refers to error patterns or sequences in the application of phonological rules for speech (ASHA, 1997). Data has been collected documenting normal speech acquisition that illustrates these patterns as typically appearing in normal phoneme development. (Hodgson, B. 2004). Generally, these patterns disappear as the child matures, and speech sound errors are replaced with correct productions. When a child persists in using these faulty patterns or processes, the child is considered to have a phonological delay or disorder.

Fluency. "A fluency disorder is an interruption in the flow of speaking characterized by atypical rate, rhythm, and repetitions in sounds, syllables, words, and phrases. This may be accompanied by excessive tension, struggle behavior, and secondary mannerisms" (ASHA, 1993)

All types of dysfluencies of speech are found to some extent in most young children. Hesitations interjections revisions and repetitions are often present in the young developing child's communications whose speech and language are otherwise developing normally. It is not uncommon for characteristics of stuttering to appear over a period of several days or almost overnight. These stuttering episodes or periods may be associated with some exciting, unusual or uncertain event (Ex. new sibling, holiday, significant family change). Just as often these stuttering patterns can seem to occur for no apparent reason and not be related to anything observable in the child's life. The stuttering behavior may last for a few days or weeks and then without any warning or explanation disappear just as quickly as it appeared. Stuttering can again reoccur in a cyclic fashion. There are several factors that influence a child with early stuttering. Among these factors are:

- Any history of dysfluencies in the family
- Attitudes of the family and the child toward the dysfluencies
- Age of onset and gender of the child
- Length of time since the onset of the stuttering
- Communicative and cultural environment of the child
- Intensity and degree of stuttering

Table 2 Articulation/Phonology Components.

Phonemic/articulation	Phonological	Oral-Motor
Speech Sounds. Categorized by vowels and by consonant manner, place, and voicing.	The rules for the sound system of the language, including the set of phonemes with allowable combination and pattern modifications.	Oral motor range, strength, and mobility. Planning, sequencing, and co-articulation of speech movements.

Table 3. Fluency Components.

Affective	Behavioral/Physical	Cognitive
Feelings about speaking	Respiration	Language/linguistic competencies
Self-esteem	Articulation	Accuracy of perceptions
Feelings in response to environmental and situational influences	Phonation	Attitudes about speaking
Feeling of fluency control	Rate of speaking	Attitudes regarding fluency
Temperament characteristics	Concomitant factors Ex. sensory integration difficulties	Internal demand for complex language.

Most often stuttering begins in the early years when speech and language development are at a peak. During this rapid language development, children move from short one and two word utterances to the production of sentences. Concurrently, a child's vocabulary also grows rapidly during this period. The first signs of stuttering generally occur between 2 and 5 years of age. For many young children, who show dysfluencies in the early years, the stuttering does not persist. **For a child just beginning to stutter at age 3.5, there is a 75% (or more) chance of a natural recovery.** Most young children will become more fluent as they get older and their language skills improve. Dysfluent speech is more common in the preschool years when a young child is learning to talk and particularly so when a child is learning abstract concepts. Since dysfluency is common at this stage it important that the early childhood SLP consider whether the dysfluency should be treated with intervention and if so what type of intervention. Generally intervention approaches address one or all of the components represented in Table 3.

Voice and Resonance Disorders. "A voice disorder is characterized by the abnormal production and/or absence of vocal quality, pitch, loudness, resonance, or duration, which is inappropriate for an individual's age and/or sex or cultural background" (ASHA, 1993a, p.40).

All children with voice disorders *must* be examined, by a physician, preferably in a specialty appropriate to the presenting complaint. The examination may occur before or after the voice evaluation by the speech-language pathologist (ASHA, 1997e). Crying and its variations in pitch and intensity alert parents and caregivers to a baby's needs. This first communication and its parental response is instrumental in the bonding and attachment of parent and child. The baby cries softly with little intensity and the parent and/or caregiver responds with comfort and attention. If the vocal volume, pitch, and intensity increases, the parent/caregiver responds with immediate care interpreting pain and/or severe discomfort. Appropriate vocal patterns are the foundation of effective communication and communicative relationships. Voice problems arise from a variety of organic/structural sources including but not limited to: vocal nodules, laryngeal web, laryngomalacia, cleft palate, craniofacial abnormalities, vocal fold paralysis, trauma, velopharyngeal incompetence/insufficiency and neuromuscular disorders such as cerebral palsy. (Morris, 1993) Voice problems may also be related to more functional issues including but not limited to: vocal abuse, hypernasal habitual patterns of vocal misuse and psychological factors. In a functional voice disorder, there is nothing organically wrong with the vocal mechanism. Additional contributing elements may include: asthma, allergies, gastroesophageal reflux, frequent colds and other respiratory problems. Voice problems are frequently seen as a larger pattern of problems that may include cognitive, structural, sensory, or neuromotor components.

Table 4. Voice and Resonance Components

Physical	Functional	Emotional
Respiration: lungs, diaphragm	Loudness/intensity, sustained phonation	Confidence
Phonation: larynx, vocal folds	Pitch, onset of phonation	Self-esteem
Resonance: velopharyngeal, oral, and nasal resonance structures	Resonance and airflow	Stress

Feeding and Swallowing Disorders

Swallowing allows us to eat and drink and get adequate food, liquids, and nutrition for growth and development of body and mind. Swallowing disorders also known as **dysphagia** must be identified managed and treated accurately in conjunction with the appropriate medical personnel. Swallowing difficulties in the pediatric population may be transient, as is often the case with children recovering from a head injury, or permanent, as is more commonly seen in children with congenital conditions such as cerebral palsy that influence physical and neurological development. While swallowing difficulties are more likely in children with multiple, severe disabilities, they are also seen in children with mild neurological and/or physical Many early childhood programs and pediatric centers have developed multidisciplinary teams to address dysphagia management plans. Infants and children with swallowing disorders are a diverse group ranging from small premature newborns to 6 year olds with coexisting conditions such as cerebral palsy. Difficulties with swallowing or feeding can have implications for the sensory and motor systems of the affected young child. This in turn can affect the way a child progresses through the development of **motor movements, sound production/communication, and bonding/ socialization**. It is important to all involved, to obtain an accurate complete health history of an infant, toddler and/or young child, regarding respiration, infection and pneumonia and an Upright Barium Swallow (UBS) examination to determine the possibility of **silent aspiration. Referrals to and collaboration with the appropriate medical professionals/providers are necessary in the effective management of pediatric swallowing and feeding problems.**

The symptoms of a swallowing disorder may include:

- poor feeding
- refusal of bottle or breast
- apnea color changes, bradycardia during feeding
- gagging vomiting or congestion during feeding (gastrointestinal reflux)
- A chronic history of pulmonary difficulties which may include asthma like symptoms bronchiolitis recurrent pneumonias or need for supplemental oxygen
- Profuse drooling
- Wet vocal or respiratory quality that emerges or intensifies during feeding

Safe swallowing and eating are essential activities of daily living and are needed to ensure effective physical and communicative development. "Swallowing function treatment is conducted to improve the child's oral, pharyngeal and laryngeal neuro-motor function and control and coordination of respiratory function with swallowing activities" (ASHA, 1997. p. 63). As noted in Table 5, a combination of physical, functional, and health factors are considered when determining if intervention is appropriate. Further discussion and information regarding pediatric swallowing and feeding is located in the appendix.

Table 5. Swallowing Factors.

Physical	Functional	Health
Oral, pharyngeal, esophageal function	Safe and efficient eating	Pulmonary complications
Respiratory function	Developmental skills for eating	Nutritional implications
Gastrointestinal consideration	Pleasure of eating, social interaction	Modified diet

Hearing Disorders

Hearing loss as a result of congenital or acquired reasons effect more than 1.2 million children under the age of 18 in the United States (Adams and Mareno, 1995) The ultimate outcome (academic and social) depend on the coordinated efforts of many individuals, including but not limited to the child, parents, teachers, the audiologist, and the speech-language pathologist. A teacher of the deaf and hard of hearing, a speech-pathologist, or an audiologist often serves as the coordinator of services and liaison for the parents and young child to the early childhood system. The heterogeneous population of children with hearing loss or deafness encompasses a broad range of functional communication styles and abilities and types of services. The relationship that exists between a child's and family's choice of communication systems and his/her ability to develop a language or languages in one or more communication modalities varies among children (ASHA, 1998).

Table 6 Hearing Components.

Physical	Functional	Emotional
Age of onset of hearing impairment	Availability and use of residual hearing. Consideration for the range of communication services styles, and skills	Attitudes of parents/caregivers and peers regarding to hearing impairment
Type/severity of hearing loss	Acoustic environment, identifying communication demands in the settings where learning and daily activities take place	Access to hearing aids, FM systems, interpreters/translators (sign, ASL, cued speech) Computer assisted devices.
Presence of additional disabilities	Continual monitoring of development of language and other performance areas	Assisting in the development and enhancement of self esteem and confidence for young hearing impaired children.

When a child has a hearing loss, the methods chosen for development of language skills are related to such factors as:

- Age of onset of the hearing impairment
- Type/severity of hearing loss
- Availability and use of residual hearing
- Presence of additional disabilities
- Access to assistive technology (computer assisted real-time captioning, hearing aids, FM systems) and interpreters/translators (sign, ASL, cued speech)
- Level of acceptance, skills, and support by family, educators, and peers
- Acoustic environment of the classroom and other spaces used for instruction and extracurricular activities

Numerous reports and studies document the effects of hearing loss on speech, language, social-emotional, and academic development (Baker-Hawkins & Easterbrooks, 1994, Kretschmer & Kretschmer, 1978, Maxon & Brackett, 1987, Quigley & Kretschmer, 1982). Even children with mild, fluctuating, or unilateral hearing loss can exhibit significant, delays. (Bess et al., 1998; Connecticut Advisory School Health Council, 1988; Davis, Elfenbein, Schum, & Bentler, 1986; Gallaudet University Center for Assessment and Demographic Study, 1988; Joint Committee on Infant Hearing, 1994).

The Agency for Health Care Policy and Research reports that the most common etiology of temporary and fluctuating hearing loss in children from birth to 3 years of age is otitis media, which can be acute or chronic and may occur with or without effusion (U.S. Department of Health and Human Services, 1994). Not all children who experience otitis media have significant hearing loss or develop subsequent communication and learning problems. However, the prevalence of otitis media (especially chronic otitis media) during what is known to be a significant period in the acquisition of communication skills places children exhibiting this illness at risk for delay or disorder of speech and oral language that may adversely affect development and subsequent educational performance (Friel-Patti, 1990; Roberts, 1997; Roberts & Medley, 1998).

How Is Communication Linked To Literacy Development?

Studies have shown that children with persistent language disorders in the later preschool years continue to have language learning problems and are also at significant risk for academic, behavioral and social-emotional challenges when they enter school. They have difficulties with reading and writing that, in turn, have an impact on academic achievement in other subject areas. In addition, these children often have impairments in the skills associated with appropriate conversational uses of language in that other children are likely to avoid conversation with such children and leave them out of social interactions (Communication Disorders Clinical Practice Guidelines, NY. 1999).

Christopher Lonigan writes in his book Early Learning and Development of Reading related Skills, "From an emergent literacy perspective reading writing and oral language skills are seen as developing concurrently and share an interdependency from an early age even in the absence of formal literacy instruction. Consequently, an emergent literacy perspective views "pre-reading behavior in the early childhood years as authentic and legitimate aspects of literacy."

In summary, it is evident that as children learn to talk they develop the skills required to understand what is said to them and to make their own needs, thoughts and feelings known through conversations and requests. At the same time they are developing the foundations of reading and writing skills. They become more aware of written/printed words and begin to develop an interest in the use of words and language. They interact with the printed word on a daily basis at preschool, in the community and at home. Parents and caregivers can see the growing interest and appreciation as young children ask "what does that say" and they begin to recite songs and rhymes. Caregivers can observe the intensity and enjoyment a young child has as he/she scribbles or points out logos or draws a picture from an experience. Young children at this time start developing the skills that prepare them to be readers and writers. This stage of early speech and language development is known as the **emergent literacy stage** and this occurs from birth and continues through the preschool and kindergarten years. This early **literacy** knowledge is strongly and reciprocally influenced by children's **oral language** proficiency. Preschool children who have **difficulties acquiring oral language** proficiency due to language disorders, phonological disorders, developmental disorders, or organizational disabilities are at **a significantly increased risk for delayed attainment of literacy skills**.

Four key principles from research literature and current studies provide a foundation for establishing the relationship between oral proficiencies and literacy development (ASHA, 2001)

1) Oral language provides the foundation for the typical development of literacy.
2) The relationship between oral language is reciprocal in nature with interconnections originating in early childhood. Research has shown that explicit awareness of the speech sound system (phonological awareness) is related to reading development (Swank & Catts, 1994).
3) Children with speech and language impairments are at increased risk, and are four to five times more likely to have problems with early, conventional literacy development than normally developing children (Neuman & Dickinson, 2001).
4) Interventions for oral language can positively influence literacy development and vise versa (Justice et al., 2002). Specific intervention for phonological and language deficits positively impact later academic achievement (Scarborough,1998; Neuman & Dickinson, 2001).

Considering this most current research it is clear that the three "Ls" ***Language, Learning, and Literacy*** are so tightly connected that they can be viewed as important, sometimes inseparable, parts of a powerful whole. If one segment is altered through instruction or intervention, all can be influenced. Positive results in one area can result in increased function in another area and serve to prevent related problems. For example, remediation of a language disorder can help to offset existing or future learning disabilities (Paul, 2003).

II. Promoting Communication Development

It is estimated that 2% of all children born each year will have a disabling condition. Many of those will have speech and/or language delays and disorders that can have a significant effect on all aspects of their lives (Paul, 2003). In some cases, people believe that language disorders do not begin until a child begins to talk. Research, however, shows that children already know a great deal about their language before they begin the talking process, even before the first word is said. Infants responses to the sounds of their native language is different than their responses to a foreign language. Infants and toddlers also use different cries and nonverbal utterances to express needs and wants. Most experts agree that it is important to identify children with developmental delays or disorders as early as possible. Intervention at earlier stages in the child's development may have a greater chance of reducing the short-term and long-term negative consequences of these disorders (Guralnick, 1998). This section of the Birth through Kindergarten (B–K) Colorado Communication Guidelines provides a rationale and specific examples for the prevention, awareness and promotion of communication development.

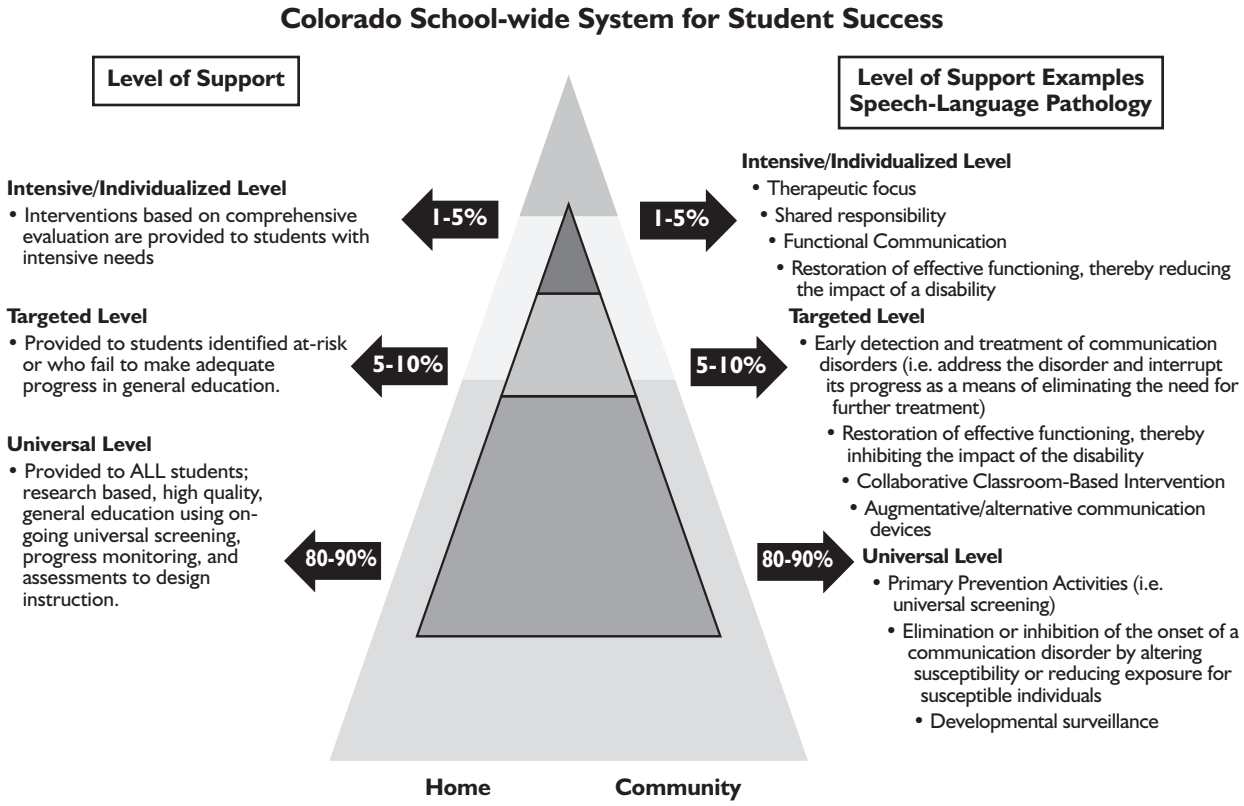
Language delay is the most common type of developmental problem seen in preschool age children. Depending on the level of delay that is considered abnormal, studies suggest that from three to ten percent or more of children in the 2-to-3-year-old range may have a communication disorder (Rescorla and Schwartz, 1990). Some authors report that children with communication disorders make up from 25% to 50% or more of young children eligible for early intervention programs (McLean and Cripe, 1997; Goodman, 1998). Early identification and early intervention may be especially important for young children with significant communication disorders (McLean and Cripe, 1997), but it is also important for those children who are at-risk for developing communication/literacy disorders. The assessment of communication/literacy in children under age six can be challenging since there is considerable variability in the rates at which children develop language skills, and variability in the linguistic quality and opportunity for different children. One thing that is clear is the strong and reciprocal relationship between language and literacy development. A recent study reported a majority of poor readers have an early history of spoken language deficits. This research cited 73% of 2nd grade children who struggle with reading had phonemic awareness or spoken language problems in kindergarten (Catts, et al., 1999). Thus, early identification and intervention are not only indicated for those children identified with significant communication disorders, but are also important for more "at-risk children" (Justice et al., 2002).

An "at-risk" child may be defined as one with limited "**risk factors/**red flags/alerts" or "clinical clues." Risk factors may defined in this context as current, historical or observable behaviors or findings that suggest that a child is at increased risk for having or developing a disorder. Some recognized risk factors include:

- medical conditions example—prematurity)
- biological factors (example—pre-natal substance exposure)
- genetic defects (example—cleft lip and palate)
- neurological defects (example—Cerebral Palsy)
- mild developmental delays (example—fine motor delay)

Speech-language pathologists recommend that these young children should be tested early and regularly (Paul, 2003). Documentation exists that intervention increases the successes demonstrated by these children (Lyons, R. 2001). In order to promote good communication development we must be aware of the possible negative elements and be vigilant to advance the positive elements.

IDEA 2004 Reauthorization



Evidence-Based Practices (Good Practices)

The concept of **Good Practice** is used to denote the use of **research based effective and measurable** techniques to provide intervention or instruction for young children who experience communication disorders and disabilities. In the past, the term "best practice" established one intervention as better than all others. **Good Practice**, on the other hand, recognizes what is the best alternative for one child may not be the best for another. Good practice is driven by evidence, results, or outcomes. Evidence based practice (EBP) does not refer to a singular focus in using research to make decisions, it rather emphasizes the systematic deliberate integration of science and craft or collected data and theory to arrive at a decision or conclusion. This type of evidence-based practice provides a climate of accountability that emphasizes personal and institutional responsibility for actions and decisions concerning Colorado's early childhood population. **Good practice is evidence based, needs based, developmentally, culturally appropriate, and relevant to the curriculum or functional development of the child**. Good Practice also carries a connation of practice that is beneficial not only for identified children but also benefits others in the environment. Speech language pathologists are ethically bound to provide "good practice" in all their programs, information and techniques.

Below are some programs, research, and information that show promising results that incorporate "good practice" within their structures.

Colorado School-wide System for Student Success

Universal Screening

One of the most effective ways for preventing communication difficulties is to ensure accurate and early identification of children experiencing difficulties in attaining critical communication and/or literacy skills. If a proactive and preventive sequence of events takes place we can look towards a preventive rather than an intervention model. The engine that drives prevention is screening and recognition. With universal screening comes recognition and observation. This creates an environment of vigilance, or developmental surveillance that allows the respondents to act in a preventive mode. ***(Add IDEA 2004 info)***

Head Start

Even Start

The purpose of Colorado EVEN START is to:

1. Help break the cycle of poverty and illiteracy by improving the educational opportunities of the state's low-income families, through the integration of adult literacy (e.g., Adult Basic Education or English Language Learning), early childhood education, and parenting support into a unified family literacy program.
2. Assist parents in gaining the literacy and parenting skills they need to become full partners in the educational development of their young children, from birth through age seven, through family-centered education programming.
3. Help children in reaching their full potential as learners.
4. Support the implementation of the Colorado Basic Literacy Act.
5. Support the Colorado Department of Education's Organizational Commitment and the attainment of the state Accreditation Indicators in particular.

EVEN START family literacy services are those services provided to participants on a voluntary basis that are of sufficient intensity in terms of hours, and of sufficient duration, to make sustainable changes in a family, and that integrate the following four components:

- **Adult Education.** Parent literacy training that leads to economic self-sufficiency
- **Early Childhood Education.** An age-appropriate education to prepare children for success in school and life experiences
- **Parenting Support.** Training and support for parents regarding how to be the primary teacher for their children and how to be full partners in the education of their home
- **Parent and Child Together.** Interactive literacy activities between parents and their children

Families eligible to participate in EVEN START programming are those in which:

- There are adults (including teenage parents) who do not possess sufficient mastery of basic educational skills to function effectively in society; who do not have a secondary school diploma or its recognized equivalent level of education; or who are unable to speak, read or write the English language.
- There are children from birth through seven years of age.

Family Literacy (A Common Definition)

The Literacy Involves Families Together [Lift] Act of 2000, enacted by Public Law 106-554, amends Section 14101 of the Elementary and Secondary Education Act [ESEA] of 1965 to include a common definition of "family literacy services" for all ESEA programs, including Title I, as follows:

Services provided to participants on a voluntary basis that are of sufficient intensity in terms of hours, and of sufficient duration, to make sustainable changes in a family, and that integrates all of the following activities:

A) Interactive literacy activities between parents and their children.

B) Training and support for parents regarding how to be the primary teacher for their children and how to be full partners in the education of their children.

C) Parent literacy training that leads to economic self-sufficiency.

D) An age-appropriate education to prepare children for success in school and life experiences.

More information about Colorado's Even Start programs can be found at **www.cde.state.co.us**

Parent/Family Partnerships

Every aspect of the communication development or intervention process for young children involves the parents in a variety of different ways. Any delay or disability that influences a young child's development is likely to have a significant impact on the child's subsequent personal social and academic life. With this in mind, it becomes important to address the needs of both the child and the supporting family unit as an arm of service delivery. Parents have an important role in

helping to monitor the development and health of their child. Parents and other caregivers (potentially including grandparents, babysitters and family day care providers) are the richest source of information about a child's development and are the primary providers of language/literacy development for their children.

Information provided by the parents and other caregivers may lead to the early identification of possible problems. At a later stage, information provided by the parents is crucial to an adequate assessment of the child's communication and the progress that the child is making in developing linguistic skills. Services for an infant, toddler or young child and their families can fall into three categories of expected outcomes. These include prevention, remediation, and compensation (*Communication-Based Service for Infants and Their Families. ASHA Committee on Language, Subcommittee on SLP Delivery With Infant and Toddlers. 1989*).

Parents are generally present during the assessment sessions, and observation of child-parent interactions is an important aspect of assessment. Parents also have an important role in helping professionals make decisions about assessment and treatment goals for the child. **Research shows that guidance and participation from the adult caregivers in a young child's intervention and practice results in the highest degree of success. (Justice, L. *Journal of Speech Language and Hearing services in the schools*, vol. 33, April, 2002)** Because parents play a critical role in the identification and assessment process, there is a need for parents to understand communication development in young children. Informing and involving the parents provides an opportunity for them to be active participants in the care and provision of services for their child. For infants and toddlers who demonstrate or are at risk for developing disabilities parents and caregivers must be an integral part of designing and implementing service.

THERAPY IS WHAT HAPPENS BETWEEN *TREATMENT* SESSIONS.

See Appendix: Parent Counseling and Training a Related Service under the Individuals with Disabilities Education Act)

Cultural Considerations

Is communication/language development different in children who are raised in bilingual or multilingual households?

Research indicates that young children who are raised in bilingual or multilingual households are ***not*** at a disadvantage when learning language. Nonetheless, the early expression of language being learned by the young child in a bilingual/multilingual household, may vary somewhat from those children who are raised in a monolingual environment. There are many variations of a bilingual/multilingual household that might impact the language learning process in the very young child. For example:

- Children with a non-English monolingual family (where the child watches television in English)
- Children within a bilingual or multilingual family
- Children who receive regular care in a language environment other than the language of the family

If a child is learning two languages at home his or her brain is trying to learn two sets of vocabulary and to understand two sets of grammatical rules. It may take longer to begin talking and still the child may at first feel comfortable using only one of the languages. Some children that come to school and are immersed in a new language are silent for a period. The rate of language acquisition may be affected by the response of others around them. If the young child's communication attempts are greeted with eye contact, acknowledgement, expansion and encouragement the language is likely to develop more rapidly. It is possible that receptive and expressive language skills may develop at different rates across the various languages in a child learning language in a bilingual/multilingual environment. A young child in a bilingual/multilingual environment may also mix languages for a period as language skills are being acquired. While ages of acquisition of language may vary based on many of the factors mentioned previously, the stages described in **Typical Communication Development** in the **Overview** are still pretty much the same. One overriding consideration is that language development should continue to move forward.

A *difference* in language development is not a *deficit*.

Differences in language development, however, present one of the greatest challenges appropriately assessing for communication disorders in young children from a bilingual/multilingual home. While children learning Spanish develop their sound system rate similar to that of children learning English, Spanish phonology is different from English phonology, and the complexity of the Spanish morphological system makes the development of Spanish different form the development of English. Many features that develop relatively early in children learning English (such as gender and number agreement) do not develop until as late as six years of age in children learning Spanish. Because of some of the differences in language structure impact the way in which children learn language, it may appear that a child learning English influenced by Spanish is delayed in his language development when, in fact, it may be a normal variation in the learning process.

In addition to linguistic differences across languages, cultural difference in communication and learning exist. These differences are found in verbal and non-verbal communication, communicative and narrative style, rules for adult-child discourse, conversational roles of young children, and culturally based learning style preferences. Even within one language, there may one or more dialects accepted by its community of speakers. A regional social or cultural/ethic variation of a language system is not considered a disorder of speech or language.

Is communication development different in children who are raised in homes that use a variation of English such as African-American English?

Many young children live in homes where a variation of English, such as African American English (AAE), or Spanish-influenced English is used. The language variation may occur in language form, language content, and/or language use. As with any child, when considering the possibility of a communication disorder in a child who speaks a variation of the Standard American English, it is important to distinguish between features of language attributable to language variation, those attributes to development, and those indicative of a disorder.

The available data indicate that the children in the 0–2 age group learning language in environments where AAE is the predominant language can be expected to follow the same course of development in syntax, morphology, semantics, and phonology as children developing standard American English (Cole, 1980). The features that typically distinguish AAE and SAE involve phonological and morphological features that do not typically develop until after the age 4 or 5 years. Blake (1984) and Stockman (1986) have shown that the morphological development of young children who speak AAE is similar to that of children who use SAE to the age of 3 years, including the development of mean length of utterance (MLU). At the age of 3 years, children learning AAE have developed the use of well-formed multiword sentences, use appropriate question form and use a few complex utterance with appropriate subjects, verbs and complements (Stockman, 1986; Stockman, 1996).

Reference: Colorado Communication Guidelines 2001

Add info on Colorado 8 Step Model (English Language Learners with Exceptional Needs—ELLEN)

Cultural Considerations and Linguistic Variation

Communication is embedded within a cultural context. For many families, English may not be the primary or only language spoken in the home. Multilingualism and other linguistic variations, such as various dialects, within a home and other care environments may affect the way in which the child learns language. For children in a bilingual or multilingual home, the early expression of language may vary somewhat from that seen in children raised in a monolingual environment. This **difference in language is not a deficit.**

The acquisition of two languages by children reared in bilingual or multilingual homes can occur sequentially or simultaneously. Simultaneous bilingual language learning occurs when the child develops the two languages before the age of three years. Bilingual children may become aware of using two languages as early as 15 months and as late as 3½ years.

In the early acquisition of bilingualism, the children use vocabulary words to indicate a concept in one or the other language. As the children develop the use of morphology and grammar between the ages of 2–3 years, the two languages develop; however, the syntactic systems may remain undifferentiated for a while. After the age of 3 years, children typically are able to use the appropriate syntax and grammar to express themselves in each language. Young children may mix grammar and vocabulary from one language to the other within a sentence (code switching) or even have a silent period when they do not communicate as much when the second language is introduced. These experiences are normal and should gradually disappear as their language skills develop. The acquisition of language in bilingual or multilingual homes by children from ages 0–2 can be expected to progress at a rate similar to that of children reared in monolingual homes and after 2 years of age the acquisition of the two languages may also be dependent on the amount of time spent communicating in both languages and the kinds of experiences the child has at home, school and in the community. Although the number of controlled studies is limited, it is generally held that there is no difference in the pace of language acquisition between monolingual and bilingual children in simultaneous language acquisition (Langdon and Cheng, 1992).

Appropriate assessment of communication and identification of communication disorders can be challenging in young children from a bilingual/multilingual home. A distinction can be made between what is typical development for the child's language and cultural environment, versus a difference resulting from the influence of learning a second language, versus a true disorder

Appropriate assessment of a child's communication development will take into account languages and dialects spoken within the child's home and other places of care, as well as, the culture of the child and the family. While a variety of standardized tests are available for Spanish speakers, there are no current tests available for many other increasingly common languages such as Korean, Chinese and Russian.

Throughout the evaluation process and provision of services, respect and encouragement for the home language should be of the utmost importance. Encouragement of literacy in the home language appears to promote literacy development as the student begins to attend school. Promoting early literacy development has been found to increase the success of students in the United States.

"Educating children from immigrant and ethnic minority group families is a major concern of school systems across the country. For many children, US education is not a successful experience. While one tenth of non-Hispanic White students leave school without a diploma, one fourth of African Americans, one third of Hispanics, one half of Native Americans, and two thirds of immigrant students drop out of school." (Enhancing English Language Learning in Elementary Classroom)

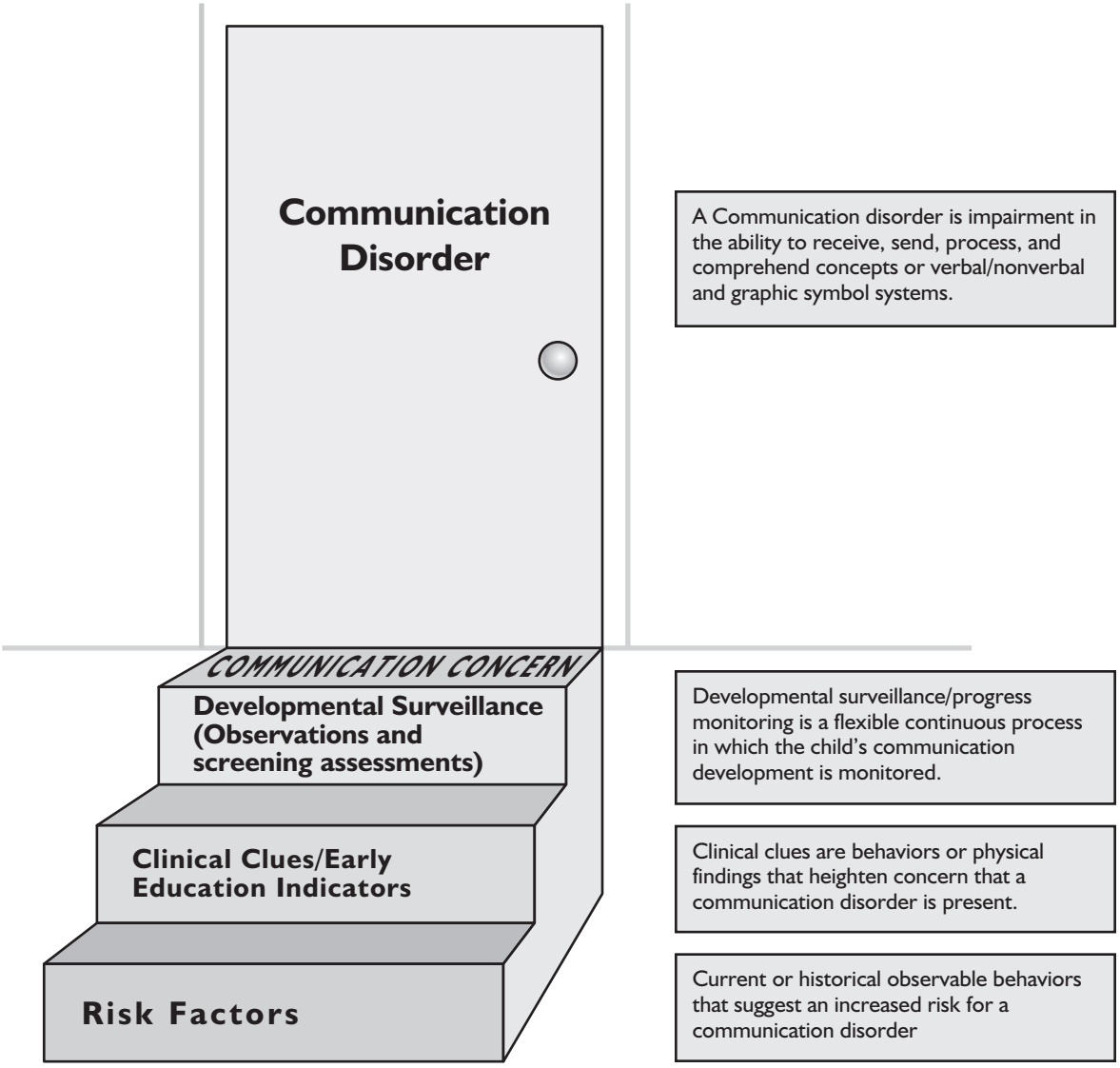
High Quality Early Childhood Practices

Environmental Considerations

Leadership and Staff Qualifications

Literacy-Rich Curriculum

III. Identification of Communication Disorders Birth through Kindergarten



Identification of a speech language disability and eligibility for services is a process that includes the following components:

- **Documentation** of events, behaviors and/or conditions that create a concern about the development of a child's communication system. Risk Factors, Clinical Clues, Screenings/Assessments
- **Demonstration** and/or report of the impact that this communication impairment has in this child's life.
- **Determination** and agreement by the team of professionals, parents and caregivers involved in this process that the communication disability exists.
- **Decision** by the team of an intervention or a course of action.

It is important to identify children with developmental delays or disorders as early as possible. Intervention at earlier stages in the child's development may have a greater chance of reducing the short term and long term negative consequences of these disorders (Guralnick, 1998). This section provides recommendations for identifying and assessing communication disorders in young children. In order to do this adequately, it is necessary to understand the process of typical communication development.

Factors that lead to in-depth assessment and ongoing monitoring

Various clues become apparent at different stages in the developmental process, which may alert parents or professionals to the existence of a possible communication disorder. The early identification of children with communication disorders, as with other developmental disorders, can occur in a variety of ways. In some cases, certain behaviors **or lack of progress** in a child's development may cause parents or other caregivers to become concerned about possible communication disorder based on information from the parents or the direct observation of the child.

*Sometimes parents are the first to notice something that raises a concern about their child's communication.

*In other cases, concerns about a child's communication may first be noted as a result of **developmental** surveillance **or monitoring** during health care visits or while the child is in the care of other childcare professionals. These initial concerns are usually based on information about **risk factors**, current behaviors or the results of routine screening tests of the child's general development.

*A concern of the possibility of a communication problem may lead professionals to do more selective screening for hearing, speech or language problems and to identify additional **clinical clues, or early education indicators**, which heighten the communication concerns.

*Once such heightened concern of a communication disorder has been identified, it follows that various types of screening and in-depth assessment of the child may be indicated.

Using risk factors and clinical clues/early education indicators to identify possible communication disorders

The concepts of risk factors and clinical clues, as these terms will be used in this guideline are described below:

- **Risk Factors** are defined in this guideline as current or historical observable behaviors or findings that suggest that a child is at an **increased risk** for either having or developing a communication disorder. For example, a history of chronic ear infections and hearing loss is a risk factor for communication disorders.
- **Clinical clues (CC)** are defined in this guideline as specific behaviors or physical findings that **heighten concern** that a child may **currently** have a communication disorder. For example, if the parent notices that a child has no spoken words at 18 months, this would be a clinical clue of a possible communication disorder, including hearing loss.
- **Early education indicators (EEI)** are specific behaviors or physical findings that **heighten concern** that a child may have a communication disorder that is **linked to later language, learning and/or literacy disorders**.

For example, a child with early chronic ear infections may demonstrate delayed language and speech sound production. The chronic ear infections constitute a **Risk Factor**. The delays in language and in the acquisition of speech sounds are **Clinical Clues (CC)** that a possible communication disorder exists and research demonstrates that speech/language delays are the **Early Education Indicators (EEI)** of early literacy and learning disorders. Clinical clues and early education indicators may be noticed by parents, others familiar with the child, or by a professional who is evaluating or caring for the child.

Identification of **risk factors, clinical clues and early education indicators** for communication disorders is a primary component of the referral for assessment process. Some risk factors and clinical clues of a possible communication disorder can be identified at a very early age; while others are not as apparent and may not be recognized until caregivers and professionals notice that the child's use of language is delayed. In general, the

risk factors for communication disorders that can be identified early on in infancy, are those that are closely related to certain biological and social-environmental factors. Clinical clues and early education indicators are more easily recognized and identified as children pass through developmental milestones.

The presence of risk factors or clinical clues is not by itself enough to establish that a communication disorder exists. Risk factors and clinical clues/early education indicators for a communication disorder are sometimes seen in children who are typically developing and do not have a communication disorder. Therefore, recognition of a risk factor or a clinical clue/early education indicator is a first step in the **process** of identifying children with communication disorders, and the presence of this fact provides an indication that further assessment may be needed.

One important method for early identification of children with possible communication disorders is to look systematically for risk factors and clinical clues/early education indicators as part of regular **developmental monitoring** of young children.

Conditions and circumstances that may create "risk factors"
1. Pre term birth, low birth weight, treatment for any length of time in neonatal ICU
2. Difficulty feeding, history of intubation, tracheostomy, Cleft lip/palate, failure to thrive
3. Anoxia, at birth or immediately afterward, positive toxicology screen at birth
4. Acquired trauma such as stroke, brain injury or other neurological disturbances
5. Genetic syndromes or conditions such as ASD, VCF, Down, Fragile X
6. Chronic otitis media, hearing problems, family history of hearing problems
7. Parental history of cognitive limitations, language or hearing problems
8. Persistent health problems or prolonged hospitalizations
9. Exposures prior to or after birth CMV, RSV, hepatitis,
10. Pre-natal exposure to drugs and/or alcohol (FAE/FAS)

The role of developmental surveillance or monitoring

Developmental surveillance is the term that most accurately describes the approach currently practiced by many health care providers, parent's, caregivers and other professionals for the early detection of a variety of developmental problems. **Developmental progress monitoring,** is a flexible, continuous process in which knowledgeable professionals monitor a child's developmental status during the provision of healthcare or early childhood services.

The process of developmental surveillance includes the following components:

- Eliciting and attending to parents'/caregivers concerns
- Obtaining a relevant developmental history
- Observing children accurately and regularly
- Sharing opinions and concerns with other relevant professionals

There are various methods that can be employed in carrying out general developmental surveillance. One important method of developmental surveillance is for professionals to monitor the child's development in relation to critical age specific "developmental milestones." Developmental surveillance may involve the use of parent questionnaires and formal screening tests. Questionnaires may be given to parents to involve them in monitoring their child's development. Formal screening tests of general development can also be conducted.

One part of the general developmental surveillance is to look specifically at the child's communication development. Several studies and agencies have evaluated patterns and timing of typical speech and language development in young children. These are known as "speech and language milestones" and can be used as a reference to monitor the child's speech and language development as part of the ongoing developmental surveillance process. In utilizing the speech and language milestones attention should be given to the terminology "typically seen" and "cause for concern."

The following **communication milestones and clinical clues/early education indicators** were compiled from a number of sources and were included only when they appeared in more than one source. (*Help Your Child to Speak and Hear*, ASHA, 2002, *Milestones,* American Academy of

Pediatrics, 2004, *Strategies for Developing Augmentive Communication Skills for Children Birth to Three, 2002,* University of North Carolina, *Guidelines Birth to Three,* State of New York, 2002.) **While "typically seen" provides a range, "cause for concern" (early education indicators) is more closely related to the outside parameters necessitating a response.** The speech and language milestones are listed in a hierarchical fashion. If, for example, there is a *cause for concern* at a younger age and that concern continues, then it is definitely *cause for concern* at the older age.

Speech and Language Milestones and Clinical Clues/ Early Education Indicators of a Communication/Literacy Problem

Typically seen during the first 3 months	Early Education Indicators during the first 3 months
☐ Looks at caregivers/others. Maintains brief eye contact during feeding ☐ Becomes quiet in response to sound (especially speech of a familiar speaker) ☐ Smiles or coos in response to another person's smile or voice ☐ Cries differently when tired, hungry or in pain	☐ Lack of responsiveness ☐ Lack of awareness of sound ☐ Lack of awareness of environment ☐ Cry is no different if tired, hungry or in pain ☐ Problems sucking/swallowing/feeding
Typically seen from 3 to 6 months	**Early Education Indicators at 6 months**
☐ Fixes gaze on face ☐ Responds to name by looking for voice ☐ Regularly localizes sound source/speaker ☐ Cooing, gurgling, chuckling, laughing ☐ Vocalizes feelings through intonation ☐ Using mouth to explore ☐ Inspects objects visually ☐ Discriminates between threatening and friendly voices ☐ Imitates facial expressions	☐ Cannot focus, easily over-stimulated ☐ Lack of awareness of sound, no localizing toward the source of a sound/speaker ☐ Lack of awareness of people and objects in the environment ☐ Rarely smiles or engages gaze with caregivers ☐ Problems feeding

Typically first seen from 6 to 9 months	Early Education Indicators at 9 months
☐ Imitates vocalizing to another ☐ Enjoys reciprocal social games structured by adult (peek-a-boo, pat-a-cake) ☐ Has different vocalizations for different states ☐ Recognizes familiar people ☐ Imitates familiar sounds and actions, attends to singing ☐ Reduplicative babbling ("bababa," "mamama"), vocal play with intonational patterns, lots of sounds that take on the sound of words, attends to music ☐ Cries when parent leaves the room (9 months) ☐ Responds consistently to soft speech and environmental sounds ☐ Reaches to request object ☐ Searches for hidden object, attends to pictures	☐ Does not appear to understand or enjoy the social rewards of interaction ☐ Lack of connection with adult (lack of eye contact, reciprocal eye gaze, vocal turn-taking, reciprocal social games, imitation) ☐ No babbling, or babbling with few or no consonants ☐ Demonstrates no purposeful interactions with familiar objects (continues non purposeful banging or mouthing of objects)
Typically seen from 9 to 12 months	**Early Education Indicators at 12 months**
☐ Attracts attention (vocalizing, coughing) ☐ Shakes head "no," pushes undesired objects away ☐ Waves "bye" ☐ Indicates requests clearly, directs others' behavior (shows objects; gives objects to adults; pats, pulls, ☐ tugs on adult, points to object of desire ☐ Coordinates actions between objects and adults (looks back and forth between adult and object of desire) ☐ Imitates new sounds/actions ☐ Shows consistent patterns of reduplicative babbling, produces vocalizations that sound like first words (ma-ma, da-da) ☐ Looks at pictures in a book for short periods of time when named by an adult ☐ Responds to no ☐ Imitates names of familiar objects ☐ Uses 1 word to convey entire thought ☐ Object permanence in tact	☐ Is easily upset by sounds that would not be upsetting to others ☐ Does not clearly indicate request for object while focusing on object ☐ Does not coordinate action between objects and adults ☐ Lack of consistent patterns of reduplicative babbling ☐ Lack of responses indicating comprehension of words or communicative gestures ☐ Exclusive reliance on context for language understanding ☐ Does not try to imitate speech sounds ☐ Does not associate action with result

Typically first seen from 12 to 18 months	Early Education Indicators at 18 months
☐ Single-word productions begin ☐ Requests objects: points, vocalizes, may use word approximations ☐ Gets attention: vocally, physically, maybe by using word ("mommy") ☐ Understands "agency": knows that an adult can do things for him/her (such as activate a wind up toy) ☐ Uses ritual words ("bye," "hi," "thank you," "please") ☐ Protests: says "no," shakes head, moves away, pushes objects away ☐ Comments: points to object, vocalizes or uses word approximation ☐ Acknowledges: eye contact, vocal response, repetition of word ☐ Responds to songs and rhymes by vocalizing ☐ Understands approximately 50 words and says approximately 10–15 words with 7–10 true words ☐ Initiates turn-taking routines	☐ Lack of communicative gestures ☐ Does not attempt to imitate or spontaneously produce single words to convey meaning ☐ Child does not persist in communication (for example, may hand object to adult for help, but then gives up if adult does not respond immediately) ☐ Limited comprehension vocabulary (understands <50 words or phrases without gesture or context clues) ☐ Limited production vocabulary (speaks <10 words) ☐ Lack of growth in production vocabulary over 6 month period from 12 to 18 months ☐ Produces/uses no recognizable consonants
Typically first seen from 18 to 24 months	**Early Education Indicators at 24 months**
☐ Uses mostly words to communicate ☐ Begins to use two-word combinations: first combinations are usually memorized forms and used in one or two contexts ☐ Later combinations (by 24 months) code relational meanings (such as "more cookie," "daddy shoe"), more flexible in use ☐ Follows 2-step related command ☐ By 24 months has 75–150 words, can be approximations of adult form ☐ Turns pages in a book more than one at a time ☐ Pats and points to picture when named by an adult; begins to name colorful pictures in a book. ☐ Understands meaning of action words ☐ Shows interest in simple stories for brief periods of time ☐ Understands multiword utterances ☐ Uses early pronouns	☐ Reliance on gestures without verbalization ☐ Limited production vocabulary (speaks <50 words) ☐ Does not use any two-word combinations ☐ Limited consonant production ☐ Largely unintelligible speech ☐ Compulsive labeling of objects in place of commenting or requesting ☐ Regression in language development, stops talking, or begins echoing phrases he/she hears, often inappropriately ☐ Little to no interest in verbal interactions

Check age division: 24 to 30 months/30 to 36 months

Typically first seen from 24 to 36 months	Early Education Indicators at 36 months
☐ Engages in short dialogues ☐ Expresses emotion ☐ Begins using language in imaginative ways ☐ Begins providing descriptive details to facilitate listener's comprehension ☐ Narrative development is characterized by collections of unrelated ideas and story elements, loosely linked ☐ Begins to include the articles ("a," "the") and word endings ("ing" added to verbs; regular plural "s" [cats]; "is" + adjective [ball is red]; and regular past tense "ed") ☐ Knows the function and purpose of written language—that words have meaning and purposes. ☐ Points to and names common pictures in a book. ☐ Begins to sit alone and turn the pages of a book ☐ Uses developmentally appropriate speech sounds	☐ Words limited to single syllables with no final consonants ☐ Few or no multi word utterances ☐ Does not demand a response from listeners ☐ Asks no questions ☐ Poor speech intelligibility with familiar listener ☐ Frequent tantrums when not understood ☐ Echoing or "parroting of speech" without communicative intent ☐ Can not sustain through a repeatable or patterned shared book reading for a period of 5–15 minutes.
Typically seen from 30 to 36 months	**Early Education Indicators at 36 months**
☐ Understands simple who, what, why questions ☐ Answers yes/no questions ☐ Uses 2 to 3 word sentences to talk about and request things ☐ Often asks or directs attention to objects by naming them following two requests ☐ Knows a book has a front and back, how to hold a book, and the direction of print (left to right) ☐ Comprehends approximately 900 words/has about 450 word vocabulary ☐ Uses prepositions and plurals. ☐ Responds to wh questions	☐ Few or no multi word utterances including consonant sounds or consonant sequences ☐ Does not engage familiar family/caregivers in communicative activities ☐ Can not listen to or maintain attention to an engaging, age-appropriate literacy activity for 5 minutes. ☐ Does not comment or express feelings or physical state

Typically seen from 36 to 48 months	Early Education Indicators at 48 months
☐ Past tense ed forms with (t, d) ☐ Refers to self as "me" ☐ Utterances are 3 to 4 words ☐ Understands differences in meanings (go/stop, in/on, big/little, up/down) ☐ Follows 2 step unrelated commands ☐ Answers "where" questions ☐ Speech is understood by familiar listener most of the time ☐ Uses modifiers accurately (red ball, big dog) ☐ Matches colors ☐ Distinguishes between print and pictures and orients books to turn pages ☐ Emerging awareness of syllables and rhymes in verbal play ☐ Beginning and developing letter name knowledge ☐ Enjoys nursery rhymes, songs and chants ☐ Recognizes familiar print such as restaurant logos and signs. May identify them. ("That says Stop!") May identify some letters ☐ Takes turns speaking in conversations ☐ Vocabulary ranges from 1,000 to 2,000 words (milestones from American Medical Association)	☐ Sentences or communications lack detail and correct sequence/order ☐ Does not use connected language to relate personal events or stories. ☐ Does not use sentences and phrases or multi-syllable words ☐ Grammatical forms are deleted or consistently in error including pronouns I, verb + ing. ☐ Unable to follow 2 step related directions with any consistency ☐ Speech unintelligible to familiar listeners ☐ Limited vocabulary < 200 words ☐ Does not demonstrate any interaction with environmental print or signs. ☐ Does not engage in pretend play
Typically seen from 48 to 60 months	**Early Education Indicators at 60 months**
☐ Uses lots of sentences with 4 or more words ☐ Uses regular 3rd person /s/z/ (Kathy hits) ☐ Pays attention to short stories and answers simple questions about it ☐ Emergence of symbolic pretend play ☐ Carries on short conversations with peers, and addresses them by name ☐ Says rhyming words and recognizes that word strings begin with the same sound. (daddy doggie dandy) ☐ Recognizes word boundaries and can point to the spaces between words.	☐ Unable to attend to a story or to answer simple questions with relevance ☐ Unintelligible speech to an unfamiliar listener ☐ Avoidance of speaking situations ☐ Unable to describe a picture in a familiar book with the picture visible.

Typically first seen from 60 to 72 months	Early Education Indicators at 60 months
☐ Complex grammatical development (i.e. embedding, conjoining) ☐ Vocabulary expands to include abstract words and their meaning before, tomorrow) ☐ Pragmatic language competence extends to other discourse behaviors ☐ Topic introduction maintenance/changes ☐ Development of narrative and metalinguistic abilities ☐ Uses the same grammar as the rest of the family ☐ Understands print goes from left to right	☐ Responses are frequently not relative to questions or topics ☐ Limited use of verbs, plurals possessives and other language forms ☐ Communication is limited to labeling ☐ Speech is difficult to understand by an unfamiliar listener ☐ Attention to stories is poor ☐ Unable to maintain topic or string together ideas in a reasonable sequence
Typically first seen from 60 to 72 months	**Early Education Indicators at 72 months**
☐ Demonstrates an understanding that words can be divided into smaller parts by tapping out counting the number of syllables in a word. ☐ Names letters in the alphabet and numbers 1–10 ☐ May know that letters have sounds and may know some of the sounds ☐ Can identify first sounds in a word (ball starts with B) ☐ Points to familiar words on page or printed (That's my Name, That word says No!, That says Mom) ☐ At this level there is a shift in the emphasis of development from oral language to developing literacy skills.	☐ The child rarely engages in reciprocal communicative interactions with familiar partners ☐ Does not demonstrate any early literacy knowledge ☐ Does not know how to hold or open a book. ☐ Does not attend to stories cannot sequence pictures in story format.

A Word About Assessment

Assessment can be broadly defined as the process of observing, gathering, and/or recording information. This information is gathered primarily for the purpose of making evaluative decisions. With the many decisions that professionals make they tend to rely on procedures, tools or instruments that are specific to the needs of their particular practice. For example once a communication disorder is suspected such as a language delay then a SLP conducts an assessment to determine if a disorder exists based on the criteria outlined by the State/District/service providers/agency. ASHA specifically identifies the assessment of infants, toddlers and young children as the "**procedures to assess pre-language and language systems in infancy and early childhood, delineating strengths, deficits contributing factors, and family needs for fostering functional communication development**." Assessment procedures are usually derived from one of two broad assessment approaches: qualitative or quantitative.

Quantitative—Assessments in this category are more **traditional and formal**. They tend to focus on isolated aspects of development that are easy to observe and measure. These tests yield information on a preset content and have specified guidelines for administration. Information in this format is usually collected once and is compared to standardized norms.

Qualitative—Assessments in this category are described as **informal or non-formal**. They consist of structured, systematic observations of behaviors within meaningful, context-bound activities. (For example, observations of a child's block building) This information is to be gathered in a more ongoing fashion across multiple contexts. This type of assessment can be:

1. descriptive (example: A detailed account of a child's verbatim language sample),
2. narrative (example: A record of a particular event or observation),
3. categorical; events and behaviors are coded on the instrument during or after the observation. (Example: checklists and rating scales).

Assessment is conducted to identify or describe an infant, toddler, or young child's existing pre-speech/speech abilities and pre-language/language interactions. It should also include the caregivers support for these assessment of infants, toddlers and young children is prompted by risk factors, clinical clues/early educational indicators, or as needed, requested, or mandated. These outcomes contribute to the diagnoses of a communication disorder.

It is recommended that an assessment include the following components, gathered by the SLP or other member of the Child Find team:

- ✔ Review of auditory, visual motor and cognitive status
- ✔ Developmental history
- ✔ Medical history if not included elsewhere
- ✔ Interview, observation and/or description of parental/caregivers support of infant, toddler, young children's communication skills, behaviors, and attempts
- ✔ Standardized and/or non-standardized evaluation that describes spoken language expression, spoken language comprehension and/or gestural communication.
- ✔ Parental/caregiver report of communication and language behaviors that appear regularly but not within the assessment activities. Please note that a parent/caregiver report is an important component but should not replace actual observations of the young child.
- ✔ Pertinent information from other disciplines (early interventionists, developmental pediatricians, physical therapist, occupational therapists) about such issues as social interactions, play, and feeding.

Table 10 provides a quick review of the definitions for some major types of quantitative and qualitative assessments along with their advantages and disadvantages. The following list of assessment tools were included based on input of early childhood SLPs throughout Colorado. The color coding refers to the type of assessment (and includes norm referenced criterion referenced, checklists/scales and qualitative nonformal observations) and is carried forward on the subsequent list. The List of Assessments is divided into two groups: Screening Tests and General Tests. **Inclusion on this list does not constitute an endorsement** nor is it intended to be inclusive.

Table 10 ***(Adapted from ASHA Desk Reference Volume 3, 1999)***

Tests & Assessments	Advantages	Disadvantages
Norm-referenced tests Qualitative Formal	Designed for diagnosis Allows comparison with age Peer group on an objective or standard Facilitates comparisons across several domains to assess discrepancies and broad strengths/weaknesses	Not designed for identifying specific intervention objectives Norm group is representative of national samples, but may not be representative enough of the child's background
Criterion-referenced tests Quantitative Formal	Test for regularities in performances against a set of criteria. Useful for designing interventions, interfacing with curriculum objectives, and describing whether a child is along a continuum of skills	Not designed for use in making program placement or eligibility decisions
Checklists/Interviews Rating Scales Qualitative Nonformal	Easy to administer and practical. Can give a broad evaluation in areas judged important. Address focused crucial skills that on which referral is often based. Assists in fine tuning further areas	Not designed to evaluate peer to age-group level. May be subject to interpretative biases
Structured Observations Play based Qualitative Nonformal **See Early Childhood notes	Permit guided evaluations communication in context Can focus on several aspects at once Occur on-site; are based on reality and functionality	Can be time consuming Presence of observer may alter responses, behavior. Requires trained staff and often video or audio taping

Assessment and Tests

Speech Language Screening Instruments—Screening is a pass/fail procedure to identify individuals who require further assessment. ***Add section of screening as part of a multi-disciplinary team.***

Test name	Age for Administration	Time required for administration	Publisher description of skills assessed
CELF 4 Screening	5–21	15 minutes	Language skills
DIBELS	4.0–10 years	10–15 minutes	Early literacy
Early Language Milestone Scale-2	Birth to 3.0	1–10 minutes	Language skills
Fluharty-2 Screening	3.0–6.11years	10 minutes	Speech and language
Kindergarten Language Screening Test-2	4.0–6.11	5 minutes	
Language Sampling	18 months & up		Semantic, syntactic, pragmatic skills and MLU
Joliet	4.0–	2.5–5 minutes	Screens for speech, voice, fluency and language
SPELT-P-2	3.0–5.11	10–15 minutes	Early developing morphological and syntactic structures
Transdisciplinary Play Based Assessment—Revised	Birth to 6 years	Flexible during play sessions	Assessment of child's developmental skills influencing play

Add informal section which will include transdisciplinary play-based assessment, ages and stages, Hawaii, observation tools, language sampling, other voice and fluency assessments.

General Speech and Language Tests (most current version)

Test name	Age for Administration	Time required for administration	Publisher description of skills assessed
Bayley Scales of Infant Development	1 to 42 months		
Boehm-3 Preschool	3.0 to 5.11	20 to 30 minutes	Basic concepts
Bracken Basic Concept Revised	2.6 to 7.11	30 minutes	Knowledge of basic concepts
Brigance Inventory of Early Development	0–7 years		General knowledge, Speech language preacademics self-help
CELF-Preschool	3 to 6	30 to 45 minutes	Receptive and Expressive Language Skills (Semantics, morphology and syntax skills)
Goldman Fristoe-2	2 to 21	5 to 15 minutes	Test of articulation
HAPP-3	2 to 8	15 to 20 minutes	For highly unintelligible speech
Khan Lewis	2 to 21	10 to 30 minutes	Test of phonological analysis
Mullen Scales of Early Learning	Birth to 5	15 to 60 minutes depending on age of the child	Language, motor, and perceptual skills
Percentage of Consonants Correct (PCC)	2.0–	Five minute continuous language sample	Analyze phonological system
Peabody Picture Vocabulary Test (PPVT)	2.5 to 21	5 to 15 minutes	Receptive vocabulary
Expressive One Word Picture Vocabulary Test (EOWPVT)-2000	2 to 18	10 to 15 minutes	Verbal expression Expressive vocabulary

(continues)

General Speech and Language Tests (continued)

Test name	Age for Administration	Time required for administration	Publisher description of skills assessed
PIAI-4	3 to 5	30 minutes	Unlimited cognitive linguistic pragmatic discourse skills
Preschool Language Scale-4	0 to 6.11	20 to 45 minutes	Developmental milestones and language skills
REEL-3	0 to 3	20 minutes	Infant language skills interview Looks at recept./expre. Through parent interview
Rossetti Infant Toddler Language Scale	0 to 3	10 to 30 minutes	Assesses preverbal and verbal areas of development Observation and parent questionnaire
Stuttering Prediction Instrument for Young Children (SPI)	3 to 8	15–30 minutes	Assesses type and frequency of dysfluent speech to directly measure severity and predict chronicity for 3–8
SPAT-D-2	3 to 98	10 to 15 minutes	Normal articulation/phonology
TACL	3 to 9.11	15 TO 25 MINUTES	Test for Auditory Comp of Language Receptive, spoken vocabulary, grammar, syntax
TEID	2 to 7.11	15 TO 45 MINUTES	Test of early language development
TOLD-P-3	4 to 8.11	1 hour	Test of language development

Determination of Eligibility

This document is designed to be a tool to assist teams in making decisions based on good evidence based practices, for Colorado's early childhood population. In this context, eligibility should be viewed not as a goal or an exact numerical equation but rather as a process. This process is designed to identify the needs of young children and their family, and to direct them toward effective resources and interventions.

If the process identifies **needs** that meet the state, district and/or BOCES criteria for communication disorder, and the **team of collaborators** (comprised of professionals and parents and caregivers) agree that these needs constitute a communication disorder, then the child is eligible to receive services and the team of early childhood collaborators would decide on a course of action.

Part C Determination of Eligibility for Speech-Language Disability

An eligible child is one who is under the age of three who meets the criteria of significant delay in development in at least one of the following domains: cognition, communication, physical, including vision and hearing, social or emotional development and adaptive behavior; OR who has a condition associated with significant delays in development.

Part B Determination of Eligibility for Speech-Language Disability

An eligible child who is three through five and by reason of one or more of the following conditions, is unable to receive reasonable educational benefit from regular education: physical impairment, vision impairment, significant limited intellectual capacity, emotional disability, perceptual or communicative disability or speech/language disability OR may qualify as a child with a disability if multiple sources of information are utilized and such child meets criteria specified in ECEA.

Identification of a speech language disability and eligibility for services is a process that includes the following components:

- **Documentation** of events, behaviors and/or conditions that create a concern about the development of a child's communication system. Risk Factors, Clinical Clues, Screenings/Assessments
- **Demonstration** and/or report of the impact that this communication impairment has in this child's life.
- **Determination** and agreement by the team of professionals, parents and caregivers involved in this process that the communication disability exists.
- **Decision** by the team of an intervention or a course of action.

Checklist for eligibility

1. Presence of one or more risk factors (documentation)	yes	no
2. Presence of one or more clinical clues/EEIs	yes	no
3. Presence of impact in the child's life	yes	no
4. Agreement of the team (must be yes for eligibility)	yes	no

If the team can respond with a yes to three out of the four (including the fourth statement) statements then the criteria for eligibility in the State of Colorado is met.

COMMUNICATION PROFILE

Date:_____

Child's Name:_____ DOB:_____ Age:_____

Significant Medical History: _____

Health/Medical Dx: _____

Referral Concerns: _____

Hearing: _____

Vision:_____

Primary Language:_____

Assessments Conducted: **Results:**

_____

_____

_____

Risk Factors: (list)

_____

_____

_____

Early Education Indicators: (list)

_____

_____

_____

Cause(s) for Concern: (attach a copy of the milestones checklist)

☐ none: child's communication development is progressing

☐ one or more: child's communication development evidences minimal concerns; yet progress appears steady

☐ multiple: child's communication development evidences several concerns; slow limited progress

☐ significant: child's communication development evidences numerous concerns; minimal progress

RECOMMENDATIONS:

_____

_____

_____

_____
Speech-Language Pathologist, CCC-SLP

IV. Intervention

What are the reasons for intervention?

Decisions to intervene with young children when there is an identified communication disorder or a potential communication disorder are generally based on one of four reasons. (California Speech-Language-Hearing Association Ad Hoc Committee on Early Intervention, Harris, R., *chair*, 2002)

1. ***Prevention*—**Implies that the onset and/or depth of a disorder can be avoided or altered.
2. ***Elimination*—**Implies that from the outcome of intervention, the young child will develop typical speech and language skills.
3. ***Modification/Remediation*—**Implies that the outcome of intervention is to assist the young child to advance developmentally and become more effective within the ranges of the identified disability.
4. ***Compensation and Modification of Environment*—**Implies that young children with significant communication disorders may need to rely on assistive, augmentative devices/activities or modifications of the environment to support communication skills.

What is the best intervention?

There is a wide array of interventions that can be employed. These interventions are characterized by diversity in styles, settings, frequency, and duration. In addition, the unique nature of each caregiving/instructional environment, the degree to which the child participates and, with whom, further contributes to differences. Therefore, it is **not** the purpose here to designate specific approaches, methods or protocols as *best practice* but rather to provide ***evidence based*** **data that will assist SLPs in making appropriate, good choices and rationales for interventions for the young children on their workloads**. Because children are individual and unique in their gifts and needs, it is important for the decision making team to consider all interventions, their variables and reasons, when matching a child's needs to service delivery and programming. **No one approach, technique, method, or service delivery is best for all young children.**

How to determine good interventions?

Over the past decade there has been an emphasis on outcomes in the speech language research. This growing emphasis has been fueled by NCLB and health care agencies. Now SLPs are asked to demonstrate the effectiveness and the efficacy of their interventions and programming. Essentially, SLPs must demonstrate that what they do with the young children on their workloads is making the kinds of positive changes that are necessary to achieve the desired outcomes. In order to achieve these outcomes it is important to appropriately match the needs with the intervention. To make successful matches the interventionist must have a broad knowledge base regarding research and evidence based practice.

Mclain and Cripe reviewed (1997) 56 studies on early speech and language intervention published between 1986 and 1995 and found two basic fundamentals:

1. Early intervention for all types of communication disorders can be more effective and efficient than interventions provided at later stages.
2. The **interventionist** must rely on **informed clinical judgment based on research and/or evidence** to determine programs objectives, settings, and approaches appropriate to meet a child's needs.

ASHA states that if the discipline of communication sciences and disorders is to move forward into evidence based practice then clinicians and researchers must become familiar with clinical trials, and efficacy research. (Castrogiovanni, A., *Research Facts Clinical Trials 2004 Edition.*, ASHA 2004) Castrogiovanni goes on to define these keywords.

Effectiveness: A measure of the extent to which a specific intervention does what it is intended to do for a specific population.

Efficacy: The extent to which a specific intervention procedure produces a beneficial result under ideal circumstances.

Protocol: The plan or set of steps to be followed in a study or intervention

The goal of the efficacy research for communication disorders is to ask the questions:

1. Does treatment work for this disorder? (effective)
2. Does this treatment work better than another for this disorder/condition? (efficacy)
3. What is changed in the child by using this treatment? (evidence of effectiveness)
4. Is the change the result of the treatment? (evidence of efficacy)

To identify good interventions look for answers to these questions and document the progress or lack of, and consistently monitor the evolving child. Consider the variables that may or may not contribute to change, examine the reasons for the intervention and the outcomes. Some of the variables that may color the results or outcomes include:

1. Direct or indirect service delivery.
2. Individual or group service delivery.
3. Home,clinic/center, or classroom settings.
4. SLP, SLPA, or parent/caregiver service providers.
5. Structured, directive techniques or a naturalistic approach.

A number of articles and studies (summarized here NOMS, Justice Studies, RTI and CCI) have addressed the effectiveness and efficacy of interventions.

It is important to maintain flexibility of thinking when monitoring progress and to be ready to consider change as the child's age and stage of development evolve.

It is these considerations that can muddy the decision-making water and is the reason that the team must engage in a careful assessment and have a rationale for the choices and decisions made.

Traditional Model vs. Results-Based Model

The following illustration clarifies the move from the traditional model of serving students to using a more child-focused model based on student needs and results.

TRADITIONAL		RESULTS BASED
The problem is within the child	←Problem Definition→	The problem is within an educational environment
Child characteristics are the problem	←Assumptions of→ Assessments Activities	The problem is that the child's performance differs from the expectations in the situation
Assessment focus is explanatory	←Assessment Purpose→ and Content	Assessment focus is descriptive and linked to intervention
Team members' roles are similar	←Use of Team→ Members Expertise	Team members' roles are different and dynamic
Individualized quantitative analysis	←Analysis of→ Assessment Data	Individualized qualitative and quantitative analysis
Service/Programming as a goal	←Intervention Focus→	Solutions/results are the goal
Indirect and infrequent monitoring	←Goal Setting→ and Progress Monitoring	Direct and frequent progress; monitoring
Change in child Characteristics	←Child Outcome Focus→	Change in problem behaviors
Provision of service	←Client Satisfaction→	Change in problem Behaviors and student success
Special education students Only	←Target Population→	All students who are Struggling in both general And special education

Dr. Gerald Nunn, PhD., Idaho State University

Response to Intervention (RTI)

For some RTI is a prevention model and for some it is an identification model. Its perspective requires a different point of view when thinking about services and intervention It requires first universal screening of all children to assist in identifying needs. It requires that all children receive a first tier of high quality research-based instruction. It requires that all members of the service delivery take an active role in assessment and curriculum. It requires a continuous monitoring or developmental surveillance of all children's language and learning. RTI defines a three tiered model of increasingly intense service, with each tier delivering differentiated curriculum and instruction. Parents, caregivers and preschool teachers may deliver service at first two tiers and eligibility/identification for SPED services may be determined through the continued unresponsiveness of the child as they receive, at each level, a more intensive focused instruction.

Some Outcomes or Learnings from RTI

- Universal screening and developmental surveillance assist in prevention of later language/learning problems
- All children benefit from strong evidence based, research based practice
- It is efficient and effective to train caregivers in a child's life to monitor and implement good practice.

ASHA: *Response to Intervention: An Alternative for Identifying Students With LD,* US Department of Education, Renee Bradley Project Director, 2004

Classroom Based Collaborative Intervention (CCI)

The classroom based collaborative intervention (CCI) is an effective way to implement RTI. CCI is an instructional design model that aligns teaching strategies with a collaborative model of service delivery. This instructional model is inclusive yet considers the importance of each area of diversity. In this model The SLP or Early Childhood Interventionist(ECI) work collaboratively with the classroom teachers to instruct all children in an inclusive setting. To accomplish this needs based instruction a model of differentiated instruction is employed. The expectations, instruction, and evaluations are mutually determined by the participants. The purpose of CCI is to create a language rich environment in which all children are exposed deliberately and recurrently to high quality verbal input from peers and adults.

National Outcomes Measurements (NOMS) and Functional Communication Measures (FCMs)

Faced with new mandates around accountability and documentation, the American Speech and Language Association (ASHA) responded with the creation of a program to assist SLPs in the demonstration of the effectiveness of their service delivery. The National Outcome measurement System (NOMS) collected data regarding the effectiveness of intervention and children's abilities to perform in a variety of settings. The Functional Communication Measures (FCMs) were created by ASHA to provide SLPs with a method to measure a child's communication progress in a functional and educationally relevant way. They are a series of seven-point rating scales, ranging from least functional (Level 1) to most functional (Level 7), and describe the different aspects of a child's functional communication or swallowing abilities. Positive functional outcomes are the desired product or results of effective intervention. These performance outcomes demonstrate **clinically significant** changes that can be documented and measured. Functional communication outcomes are born from an accurate evaluation and a clear vision of how the child's speech and language skills are linked to their development. In an era of accountability it is important that we are able to measure changes and to provide evidence that these changes are **clinically significant** and are the result of **good practice** and effective intervention. Bain and Dollanger (1991) suggest that to be clinically significant changes should be "due to intervention and not maturation, real and not random, and important not trivial." The following six FCMs were developed to measure communication skills of the young prekindergarten child:

- Articulation/Intelligibility
- Cognitive Orientation
- Pragmatics
- Spoken Language Comprehension
- Spoken Language Production
- Swallowing

These FCMs were designed to describe functional abilities over time from admission to discharge from the speech-language treatment program, or over the course of an academic year. They are not dependent on administration of any particular formal or informal assessments, but are informal clinical observations of the child's communication abilities. The FCMs are not intended to reflect the entire evaluation or to describe all aspects of the child's communication abilities. FCMs have not been developed for all goals that might be addressed as a part of a child's treatment plan/IEP. For example, there is no FCM for oral motor functioning. While this may be an important aspect of any treatment program, improved oral motor functioning in isolation is not by itself a functional outcome. Rather, it is required to achieve communication and related behaviors such as swallowing, speech intelligibility, etc.

Each level of the FCM contains references to the intensity and frequency of the cueing and use of compensatory strategies that are required to assist the child in becoming functional; and independent in various communication situations and activities.

Frequency and Intensity of Cueing

Consistent	80–100% of the time
Usually	50–79% of the time
Occasionally	20–49% of the time
Rarely	less than 20% of the time

Intensity of Cueing

Maximal	Multiple cues that are obvious to nonclinicians. Any combination of auditory, visual, pictorial; or tactile cues.
Moderate	Combination of cueing types, some of which may be intrusive
Minimal	Subtle and only one type of cueing

You will notice that the intensity and frequency of the cueing may be modified from one FCM level to another as the complexity of the information/task or situation increases. Read the description of functional levels to determine the amount and intensity of cueing used in scoring the FCMs. The following can be used as general guidelines to determine placement at various levels.

- ✔ At a Level 1, the child's communication abilities are nonfunctional, and the child is generally unable to respond to a task regardless of the amount of structure or cueing that is provided. If, because of the child's condition, you are unable to elicit any response for a targeted behavior, do not score the FCM. For example, if a child is nonverbal and, although you suspect that the child's speech may be unintelligible, you are unable to evaluate or confirm this, do not score the Articulation/Intelligibility FCM until you actually initiate treatment in that area.
- ✔At the lower levels, the burden of care is placed on the communication partner to make the child functional. With improvement, the child assumes greater responsibility for his/her functional communication; however, there may be an increased need for external structure or cueing as the complexity increases.
- ✔Level 5 is typically the transition to functionality. There is a shift at this level as the child begins to assume more responsibility for the communication and may begin to initiate some compensatory strategies. Although the child may continue to require cueing at the higher FCM levels, there is a decreasing dependency on the clinician and others to make the child a functional communicator.
- ✔At a Level 6, the child may be fairly independent, but still rely on the communication partner, more than what would be expected for his/her chronological age, to provide external cueing/structure and direction.
- ✔At a Level 7, the child is fully independent in all aspects of group activities. Although the child may self initiate and use some compensatory strategies, he/she rarely relies on any external cues from the communication partner. Scoring a Level 7 assumes independent functioning and that the child's skills are within normal limits in a particular clinical area.
- ✔If the child exhibits communicative behaviors at more than one level, score the FCM at the level that best reflects the majority of the functional communication abilities for the child.

Key Factors in Treatment of Articulation Disorders in Preschoolers

- **Amount of Treatment—**This data considered those children that received only 0.5 to 2 hours of service (minimal) versus those that received 60 or more hours of service. The findings revealed that nearly all (91%) of the children who received over 60 hours of intervention showed demonstrable change in their articulation skills and the majority (68%) attained 2 or more levels of progress on the Articulation/Intelligibility FCM. **This information indicates that not only did more children make gains but they also made greater gains.**
- **Service delivery model—**This compares the service delivery models of **individual** versus **group** treatment setting. These results reveal that children who received individual treatment for articulation disorders made greater gains in a shorter period of time than their counterparts that received group treatment. Whereas this is true for students with articulation/phonology only issues, it is not true of their counterparts with other types of communication disorders (expressive, receptive, pragmatic) or **where articulation appeared in conjunction with an additional communication disorders.** For these children the **group service model was as effective in both the gains and time frames it took to achieve the gains.**
- **Completion of Structured home program—**The data here revealed that children that completed a structured home program demonstrated more functional change and progressed through more levels of FCMs. This would indicate that SLPs wishing to maximize outcomes would actively explore ways to involve caregivers in treatment. **Additionally this information could be used to encourage parents in the crucial role they have in intervention.**

Adapted from: American Speech-Language Hearing Association. *Preschoolers With Articulation Disorders What Affects Progress?* Rockville, MD: Schooling, Tracy; 2002

The results of an ASHA omnibus survey indicated that 72% of school based SLPs provided services for preschoolers. (American Speech-Language Hearing Association. 2002 Omnibus Survey Results. Rockville MD: Schooling. T.; 2002) When considering the results of the NOMS data that only applied to preschoolers, NOMS data spotlighted the kinds of key factors that are associated with quality services that create functional, meaningful outcomes.

The Justice Studies

Dr. Laura Justice, PHD, CCC-SLP, assistant professor at the Curry School of Education, University of Virginia at Charlottesville has dedicated the past seven years of research to understanding literacy. Most recently she has focused on emergent literacy among preschoolers who are at-risk. Her work, along with others, provides a direction for the types of interventions that can be successful working with children identified with speech and language disorders. **This research provides a basis for *evidence based practice* for the early childhood SLP in the areas of language, learning, and literacy.** (Justice, Laura,. "Creating Language Rich Preschool Classroom Environments," *Teaching Exceptional Children,* Vol. 37, No. 2, 2004)

Some Key Factors to Consider Resulting from the Justice Studies

- "The key to emergent literacy is to recognize that it encompasses a significant number of different skills required for learning (both inside out or bottom up and outside in or top down)." Justice, 2004.
- **Storybook reading** is an effective intervention technique to facilitate language and literacy development.
- **Alphabet knowledge print concepts and phonological** awareness are critical components that need to be directly addressed
- **Guidance**, interaction and participation with responsive adults is necessary.
- **Repetition** can be particularly beneficial.

The Role of the SLP

The roles of the SLP currently are dynamic in relation to the evolving knowledge base. The SLP's role in can have many interpretations and frequently requires creativity and flexibility. SLP's have a direct role in intervention with young children who have communication disorders.

Activities may include therapy and explicit teaching/modeling of the speech and language production and acquisition concepts. It may also include the direct service to support the development of spoken language as a foundation for later developing written language concepts. Depending on the child's age and severity factors, delivery model structures and availability of alternative services, among other factors, the SLP may serve more of a direct role in some situations than others. For SLP's in school settings, the way this role is implemented will be significantly affected by state and local disciplinary function.

1) **Family Consultant/Advisor**

A Consultant/Advisor serves as a resource in meeting a young child's needs, as well as, using his/her knowledge and expertise to make suggestions to others. The SLP has a strong knowledge base that can be shared with others and therefore enhancing the young child's learning opportunities. For some children with communication disorders, the SLP may not assist directly, but may work with other special service providers, parents/family and caregivers to facilitate achievement. The Consultant/Advisor helps parents/family, teachers and caregivers in the planning and implementation of modifications to a language curriculum/program. Instruction and assessment may also be involved.

2) **Provider of Universal Screening and Monitoring Services**

A Screening Monitor role utilizes universal screening techniques to identify and monitor children at-risk. In this role the SLP uses his/her knowledge about the principles and methods of prevention of communication and swallowing disorders in young children to facilitate early recognition and assessment of possible communication disorders. Additionally, the SLP can provide accurate information to parents, families and caregivers to facilitate the appropriate screening/surveillance, and monitoring of possible communication disorders and related concerns. Collaborate with other professionals to identify risk factors related to communication development among children birth through five.(ASHA 1999) Ex. Using SLP checklist to identify children with phonological awareness needs in preschool or kindergarten classrooms.

3) **Joint Planner**

A Joint Planner is a planning team member that works with parent and colleagues to develop an Individual Educational Plan (IEP) or a Individual Family Service Plan (IFSP). The SLP certainly has an integral part of the planning and designing of programs for young children with communication disorders, but his/her repertoire of skills and proficiencies can be helpful when shared with colleagues to develop other plans to benefit the child's learning and or development. Ex. Working with parents and colleagues to develop literacy acquisition plan.

4) **Collaborative Consultant**

A Collaborative Consultant recognizes the value of collegiality and works in tandem with others to meet goals. This role encompasses all others. Regardless of the specific functions or tasks, which an SLP may be involved, at the core of collaboration are these reciprocal notions: Our work in therapy is informed and enhanced by the expertise and experience of others. (.Erhen,1997) Ex. Assisting parents of young children to develop Strategies for shared book reading experiences. Instructing teachers or caregivers in using phonological awareness materials.

5) **Demonstrator and Model**

A person who serves as a model demonstrates a particular approach or skill. SLPs have the opportunity of interacting with teachers, parents and caregivers on a regular basis. Demonstrating specific techniques, which may be helpful to the young child with communication problems, can be a powerful learning experience for both parties. In a survey mailed to 1036 kindergarten teachers, 438 respondents indicated positive perceptions regarding the SLP's role in contributing to the reading and writing instruction to prevent failure by facilitating language acquisition emergent literacy. (ASHA Leader, 2003) EX. SLP's might model scaffolding strategies for children/adults. SLP's demonstrate specific oral motor techniques to parents.

6) **Co-teacher**

A co-teacher works with the caregiver or classroom teacher to increase the interaction of a student with the general education curriculum and environment. The young child's communication needs are addressed in a way that will impact

developmentally appropriate speech language skills. "New skills and concepts are taught using the young child's areas of strength." (Montgomery et al. 2003) EX. SLP teaches phonological awareness skills using curriculum vocabulary to a small group of children including identified children and peers in the early childhood classroom.

7) **Direct Service Provider**

A Direct Service Provider works face-to-face with young children to meet their needs, including swallowing processes, biological, neurological, acoustical, psychological, developmental, linguistic and cultural bases. Activities may include therapy and explicit teaching of speech and language production and acquisition concepts. The SLP works to analyze and evaluate the information related to the young child's communication and interdependent processes to determine their impact on the young child across environments. The direct service provider articulates the role of oral language as precursor to literacy development. The SLP as a direct service provider can assist the young child in learning developmentally appropriate pre literacy/literacy skills, as well as, sound/word level skills, awareness of the alphabetic principle, comprehension skills, knowledge of structures, and comprehending and producing coherent spoken texts. It is also appropriate for SLP's to have direct role in literacy intervention. (ASHA, 2000) EX. Intervention for an identified communication disorders.

The Role of the SLPA

The SPEECH-LANGUAGE PATHOLOGY ASSISTANT (SLPA) is typically regulated in a school program through at least two levels: the state LICENSING or CERTIFICATION of training level and the local school district employment level. Trained and supervised SLPAs can be very helpful to speech-language pathologists, especially if caseload numbers are high, and SLPAs allow greater numbers of children to be seen for more intensive services.

SLPAs cannot maintain their own caseload. They must serve students who are identified by a speech-language pathologist and an IEP team only. They must be directly supervised 10–30 percent of the time they are working with students. Initially, SLPAs will require greater amounts of supervision to assure that intervention and other activities are conducted accurately and uniformly. However, SLPAs can provide services to students using all available models and may work simultaneously with speech-language pathologists. This allows daily intensive therapy for some students, in-class support for some students, and discrete trial sessions for others. Carryover and generalization sessions can be set up on a routine basis for students about to be dismissed.

Statewide Augmentative/Alternative/ Assistive Communication Teams (SWAAAC)

The Statewide Augmentative/Alternative/Assistive Communication (SWAAAC) teams were initiated by the Colorado Department of Education (CDE) in 1983 in response to an increasing need to serve students with severe communication disorders. Over the years, the services of the SWAAAC teams have expanded to include a wide range of assistive technology devices and services. These devices and services are frequently implemented for children experiencing difficulty with reading, writing, speaking, and other life activities affecting their education.

Today there are over 50 identified teams throughout the State of Colorado serving 64 school districts. Teams typically include a speech language pathologist, an occupational and/or physical therapist, school psychologists, special educators, classroom teachers and other individuals as they are needed. Family members and the students receiving services are also valued members of the team.

Services provided by SWAAAC team members include: evaluations in conjunction with parents, therapists, and teachers, as well as training and follow-up on an as-needed basis. Team members are available to serve as consultants to family members and to school personnel working directly with a child. They are also available to answer technology-related questions and to assist students, family members and educators in the selection of appropriate assistive technology devices. Once the technology needs have been determined, SWAAAC team members work with the family and school team to determine funding needs and to process necessary paperwork.

Referrals to the SWAAAC teams can be initiated by a teacher, support service provider, SWAAAC team member, parent or administrator. Once a referral has been made, a case manager is assigned to coordinate scheduling, assessment, team

meetings, paperwork, and any necessary follow-up. Active participation in the assessment and implementation process by family members is welcome and encouraged.

To locate the SWAAAC team serving your area, please contact your local Special Education Director or contact:

SWAAAC Office
1245 E. Colfax Ave., Suite 200
Denver, CO 80218
303-315-1276
303-837-8964 TTY
303-837-1208 FAX
800-255-3477

For more information go to **http://www.uchsc.edu/atp/projects/swaaac/swaaacguide.pdf**

Service Delivery Models

When considering a service delivery model it is important to remember that service delivery must remain dynamic and flexible and able to be altered as the needs of the child change. No single service model is to be used exclusively during intervention. It should be noted that an array of services should be available in a variety of settings to support young children so that the best match can be made and changes are systematic and encouraged within the natural environments of home, preschool, and community. Decisions regarding the nature type and location of intervention are based on a child's needs and must be consistent with the child's IEP or IFSP. The following table provides an outline to guide the dialogue that should occur during the development of the intervention plan.

Service Delivery Models for Speech Language Pathologists				
	Itinerant/In Home Program (Direct Service)	**Collaborative Classroom/Preschool Program (Direct Service)**	**Pull Out/Center Based Program (Direct Program)**	**Consultation Program (Indirect Service)**
Population Served	All communicative disorders All ranges (mild to severe) Generally serving 0–3years of age	All communicative disorders (mild to severe). Primarily ages 3 to 6	Moderate to severe and/or multiple communicative disorders. Primary handicapping condition is communication regardless of etiology. Ages 0 to 6	All communicative disorders All ranges (mild to severe). Ages 0 to 6
Services Provided	Program, development management, coordination and evaluation services. Direct services and consultation with other service providers and caregivers to follow up on additional programming.	Program, development management, coordination and evaluation services. Direct services and consultation with other service providers. Primary responsibility for pre-academic and other skill areas rests with preschool teacher and other team members.	Program, development management, coordination and evaluation services. Intensive direct services. Consultation with other service providers. Primary responsibility for pre-academic and other skill areas rests with SLP case manager supported by other team members.	Program, development management, coordination and evaluation services. Develops program to be carried out by others.(indirect services)
Recommended Group Size	Individual provided in (naturalistic)home or itinerant setting	Individual to small group provided in preschool/classroom setting (3 identified children to 10 typicals.)	Individual to small group provided in a center based site. Up to 10 children per SLP	Individual/group
Suggested Amount of Time Per Day	Variable as needed .5 hour up to 2 hours daily for up to 2 to5 days weekly	As needed 1 to 3 hours daily up to 2 to 5 days weekly	As needed up to 3.5 hours daily up to 5 days weekly	As needed
Rationale for WorkLoad Size	Infants and toddlers require an increased amount of time to effect changes in a rapidly changing developmental system. Assisting/training parents/caregivers in needed programming for daily intervention activities. Consulting with coordinating services.	Moderate to severe needs require a trans-disciplinary program including regular collaborative opportunities. Moderate to severe needs require a more intensive, explicit, planful programming embedded in the regular instructional routine.	Moderate to severe needs with multiple communication disabilities requires a focused program addressing the variety of communication needs. Additional planning and clerical may be required	Amount of time needed to organize and create the program needed. Time to train the personnel that will implement the program.
Caseload/ workloads	Up to 35 with support from community, family and coordinated services	Up to 15–30 with trans-disciplinary team support	Up to 10 without assistance, up to 15 with assistance.	10–50 children with mild to marginally moderate communication difficulties.

V. Appendices

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B. Glossary/Terminology/Definitions

Articulation
The motor movements involved in the production of speech sounds. Traditionally, this term was used to refer to phonology and articulation. A typically developing child may have acquired the phonology of the language and yet still make some articulation errors in producing given speech sounds.

Fluency
The overall flow or rhythm of speech production. Typically, speech is produced with relatively few hesitations, few word repetitions and no-part word or sound repetitions. The flow of speech production is typically without effort or exaggerated facial expressions

Language Comprehension
(Also referred to as reception or processing) The final result and intermediate processes in the analysis and understanding of speech. It includes a series of stages beginning with speech perception, sound identification, identification and access to words, morphological and syntactic analysis, and application of world knowledge. For older children and adults, this term also applies to the understanding of written language.

Language Production
The spoken or gestural (in American Sign Language) expression of language. The abilities to produce sounds, syllables, words and other sentences that form conversation (discourse). For older children and adults, this term also applies to the understanding of written language.

Morphology
The smallest meaningful units in language including words that can stand alone and syllables or sounds that can add meaning to words and the rules that combine these units. For example, in English, words such as boat, book and walk are morphemes (words that stand alone). English also uses a number (as do many other languages) of sounds and syllables that can be added to words that modify the meanings of words (past tense, plural, etc.). These are termed morphological markers.

Phonology
The component of language that includes consonants and vowels, sound features, syllables, syllable features (syllable stress) and rules for combining sounds and syllables to form words and phrases. For example, in English, the maximum number of consonants that can occur in a row is three, and some combinations are not allowed (such as "shv"). English words are typically composed of a stressed syllable followed by 1 or more unstressed syllables.

Pragmatics
The use of language in context including implicit and explicit communicative intent, nonverbal communication (intonation, communicative gestures, facial expressions), social aspects of communications and discourse (turn-taking, topic maintenance, etc.).

Semantics
The meaning of words and the meaningful role of words in phrases or sentence contexts. The definitional meanings of words, including the semantic features of the word "ball (round, can be thrown, etc.), the referent categories of words (baseball, football, soccer ball, etc.) as well as the meaningful roles (semantic relations, function or thematic roles such as Agent or Performer of Action are all part of semantics.

Syntax
The rules governing the order and relationships among words or phrases in sentences. For example, in English, sentence subjects must be included in sentences (unlike Spanish) and precede the verb. The verb must agree with the subject in number (for example, if the subject is "the boys" the verb must be "run" not "runs").

Voice
The vocal quality, pitch and intensity of speech. Typically, speech is produced with smooth and effortless production of voice (vibration of the vocal folds),that is not unintentionally whispered or hoarse.

Components of language
Phonology is the sound system of a language and the rules that govern the sound combinations. Morphology is the system that governs the structure of words and the construction of word forms. Syntax is the system governing the order and combination of words to form sentences and the relationships among the elements within a sentence. Semantics is the system that governs the meaning of words and sentences. Pragmatics is the system that combines all of the previous language components in functional and socially appropriate communication.

C. Syndromes and Established Risk Conditions and Communication Characteristics

A syndrome is a distinct collection of symptoms; some are genetic, while others arise from disease acquired pre-natally or post-natally. The syndromes and conditions listed below are divided into three broad categories that generally reflect origins of acquisitions. Genetic/chromosomal, Biological (such as pre-natal/ postnatal exposures to harmful substances and/ or metabolic disorders), Environmental (such as prenatal/postnatal exposures to disease, trauma or disorders) (Gerber, 1990, Weitzner-Lin, 2004).

	Genetic/chromosomal
Angleman	A neurogenic disorder usually caused by a deletion of DNA form the 15th chromosome characterized by stiff jerky gait, severe developmental delay, absent speech, happy demeanor, protruding tongue and seizures. Feeding problems.
Beckwith Weidman	Genotypic abnormalities of the distal region of chromosome 11. Infants are generally large for gestational age with a neonatal onset of hypoglycemia. Post natal overgrowth, large tongue often there are pits of the external ear and organ overgrowth. 1 in 15,000 births
CHARGE Association	Characterized by cleft of the eyeball (caloboma) heart defects, (atresia choanaw) blocking of the airway, retardation of growth, genitourinary problems, ear abnormalities, and hearing loss. 1 in 10,000 births
Cri du Chat Syndrome	Deletion of short arm of the 5 chromosome, mental retardation, narrow oral cavity
Crouzon and Apert Syndromes	Most common craniosynstosis syndromes (infant cranial sutures close too early). 1 in 100,000 births
Down Syndrome	Trisomy 21. Most frequently reported genetic syndrome characterized by hypotonia with open mouth posture, hyperflexibility of joints, mental retardation. Occurs in 1 out of 800 births
Edwards Syndrome	Trisomy 18. Hearing impairment and retardation. Rare.
Fragile X Syndrome	Fragility on the x chromosome. Characterized by prominent forehead, long narrow face, large ears, hypotonia. Presence of retardation and specific language characteristics. 1 in 1,000 live born males and 1 in 2,000 live born females
Klinefilter Syndrome	(XXY) Characterized by stigmata of X chromosome which appears at puberty. Progressive mental retardation and progressive hearing problems
Neurofibromatosis	Autosomal dominant Genetic disorder of the nervous system which causes tumors to form on the nerves anywhere in the body. Progressive disorder that effects all races and sexes equally. 1 in 3,000–4,000 live births
Noonan Syndrome	Autosomal dominant. Characterized by cardiac, pulmonary, skeletal defects and craniofacial abnormalities. Expressive language deficits, possible mental retardation. Occurs 1 in 1,000 live births
Patau Syndrome	Trisomy 13. Multiple handicaps of craniofacial area, hands, heart, and gonads. Rare 1 in 6,000 births
Pierre Robin	Characterized by micrognathia glossoptopsis (tongue fall back) air obstruction and incomplete cleft of the palate
Prader-Willi	Genetic disorder abnormality of chromosome 15 that is characterized by short stature, mental retardation or learning disability, low muscle tone, an involuntary urge to eat coupled with reduced need for calories which leads to obesity. One of 10 most common conditions seen in genetic clinics
Stickler	Believed to be a result of a mutation of genes during fetal development. Most common tissue disorder in the U.S. Characterized by some degree of cleft palate, cataracts, flat face, small jaw, skeletal abnormalities. Affects 1 in 10,000 persons

(continues)

	Genetic/chromosomal
Turner Syndrome	45 x. Affects only females characterized by webbing of the neck, short stature, and female hormone deficiency. Frequently have conductive hearing loss and recurrent otitis media About 65% have sensory neural loses
Treacher Collins	Believed to be caused by a gene change on chromosome 5 which affects facial development. Characterized by down slanting eyes, notched lower eyelids, absence of cheekbones, small lower jaw, ear anomalies. 40% will have hearing loss and there is an elevated risk for cleft palate
Velocardiafacial VCF	VCF, Shprintzen, 22g11. Characterized by hypernasality learning disabilities, speech and language impairments, cardiac difficulties, cleft palate (submucous, occult) growth deficiencies, immunologic and metabolic abnormalities and behavior difficulties. 1 in 2,000 children born with VCF, it is reported to be the second most common genetic disorder.
Waardenburg Syndrome	Autosomal dominant Characterized by developmental anomalies of the eyelid, eyebrows, pigmentary defect of the iris and congenital sensori neural deafness
Williams	Characteristic facial features (wide mouth, long philtrum, small chin, puffiness around eyes) Heart and blood vessel problems, dental abnormalities, kidney abnormalities, hypercusis, muscuskeletal problems, developmental delays/learning disabilities, attention deficit, strength in expressive language overly friendly. 1 in 20,000
Worster Drought (Also known as congenital Suprabulbar Paresis a form of cerebral palsy)	Problems occur with mouth tongue and swallowing. Characterized by early feeding problems and language impairment. Many children have mild learning and behavior difficulties including hyperactivity

FACES—The National Craniofacial Association
PO Box 11082
Chattanooga, TN 37401
Email: **faces@faces,cranio.org**

Prevention: *The etiology of communicative Disorders in children,* Sangord E. Gerber Prentice Hall Englewood Cliffs, New Jersey 1990

D. Comparison of Part B and Part C

	Part C Infants and Toddlers Birth to Three Years	Part B Section 619 Three to Five Years
Responsible Agencies in Colorado	Department of Education, Department of Social Services (DDS, DSS, MH, Child Care) Department of Public Health and Environment, Department of Health Care Policy and Financing	Department of Education, Local Education Agencies (LEA)
Governing Laws	Individuals with Disabilities Education Act (IDEA)/Part C, P.L. 105-17; Colorado Revised Statutes Title 27, Article 10.5	IDEA/Part B, Section619, P.L. 105-17; Rules for the Administration of the Exceptional Children's Act, Article 20 of Title 22, C.R.S. (ECEA)
Ages	Children, ages birth through two, inclusive.	Children, ages three through five, inclusive, or an eligible child who is 2½ and turns three during the first semester of the school year.
Goals	The focus in on supporting the family to meet the developmental needs of their child with a delay or disability.	The focus is on the child and his/her educational needs
Child Find	LEA has the responsibility to design a process to inform the public and identify, locate and evaluate children ages birth through 21 who may be eligible to receive special education services. In Colorado, a community wide interagency process is often used to meet this requirement.	LEA has the responsibility to design a process to inform the public and to identify, locate and evaluate children ages birth through 21 who may be eligible to receive special education services.
Referral	Referral may be directly initiated by a parent or other interested persons; Timelines: upon receipt of any referral, a public agency will appoint a service coordinator as soon as possible and within 45 calendar days complete an evaluation and assessment and hold a meeting to develop an Individualized Family Service Plan (IFSP)	Referral may be directly initiated by a parent or other interested persons; Timelines: receipt of written parental permission to assess, assessment, planning, determination of disability, and if disabled, Individual Education Program (IEP) development shall be completed within 45 days.
Eligibility	An eligible child is one who is under the age of three who meets the criteria of significant delay in development in at least one of the following domains: cognition, communication, physical, including vision and hearing, social or emotional development and adaptive behavior; OR who has a condition associated with significant delays in development.	An eligible child who is three through five and by reason of one or more of the following conditions, is unable to receive reasonable educational benefit from regular education: physical impairment, vision impairment, significant limited intellectual capacity, emotional disability, perceptual or communicative disability or speech/language disability OR may qualify as a child with a disability if multiple sources of information are utilized and such child meets criteria specified in ECEA.
Family Involvement	Families must be involved in the IFSP process, An IFSP meeting may not be help without the parent or surrogate parent's participation. Written parental consent is necessary for a child's evaluation and delivery of services. An assessment of the family's resources, priorities and concerns are a voluntary part of the evaluation/assessment process. Parents may refuse any service offered and maintain their right to any services they choose.	Part B of IDEA advocates strengthening the role of parents in the special education process and ensuring that parents of eligible children have meaningful opportunities to participate in the education of their children at school and at home. Families must be involved in the IEP process. The LEA must take steps to ensure that they are afforded the opportunity to participate. Written parental consent is necessary for a child's evaluation and delivery of services. LEAs must ensure that the parents are regularly informed of their child's progress towards annual goals.

	Part C Infants and Toddlers Birth to Three Years	Part B Section 619 Three to Five Years
Type of Plan	An IFSP* is a written plan that is used to document desired outcomes for the infant or toddler's developmental growth and learning and the services to be provided to the eligible child and family. IFSPs are reviewed at least once every six months with the service coordinator and rewritten annually. IFSPs must include a statement of the child's present level of development, statement of the family's resources, priorities and concerns, a statement of the major outcomes expected and the criteria, procedures, and timelines used, a statement of necessary early intervention services, a statement of the natural environments in which services will be provided, the projected dates for initiation and anticipated duration, the identification of the service coordinator, and the steps to be taken to support the transition of child to preschool or other appropriate services.	An IEP* is a written document that includes a statement of the child's present levels of educational performance, a statement of measurable annual goals, including benchmarks or short term objectives, a statement of the special education and related services to be provided, a statement of program modification or supports, an explanation of the extent to which the child will not participate in regular class, the projected date for beginning services, anticipated frequency and duration, statement of how the child's progress towards the goals will be measured and how the child's parents will be regularly informed of the child's progress. The IEP must also contain a completed transition plan if applicable.
Service Coordination	Each eligible infant or toddler and their family must be provided with one service coordinator. The designated service coordinator should be the person who is most immediately relevant to the infant or toddler's or family's needs. That person is responsible for: coordinating all services across agency lines, facilitating connections between families and potential supports and serving as the single point of contact in helping parent obtain the services and assistance they need. Service coordination is an active, on-going process that involves assisting parents of eligible children in gaining access to the early intervention services and supports, coordinating the provision of services and supports, facilitating the timely delivery of services and continuously seeking all services and supports necessary to benefit each child's development.	Under special education law, there is no requirement that a service coordinator be designated for a child and their family. As listed in ECEA, child find coordination includes many components which are a part of service coordination. These are planning and development in the areas of: public awareness, community referral systems, screening and evaluation, service coordination and staff development. Also listed are coordination and implementation in the areas of: interagency collaboration, screening procedures, including vision and hearing, and referral procedures for parents and children about all public and private resources that can meet identified needs.

* In the case of a child with a disability, age 3 through 5, LEA may choose to have IFSP serve as IEP. (See IDEA P.L. 105-17 Section 636 and Federal Register 34CFR Part B, Section 300.342.)

	Part C Infants and Toddlers Birth to Three Years	Part B Section 619 Three to Five Years
Services	These servicers are designed to meet the developmental needs of each child and the family's needs related to enhancing their child's development. They are provided by qualified personnel in conformity with IFSP and to maximum extent appropriate are provided in natural environments, including the home and community settings where children without disabilities participate. Services included are: • Assistive technology devices and services • Udiology • Family training, counseling and home visits • Health services (necessary to enable the child to benefit from early intervention) • Medical services (for diagnostic and evaluation purposes only) • Occupational therapy • Physical therapy • Psychological services • Social work services • Special instruction • Speech and language pathology • Service coordination • Transportation • Vision services	Special education means specially designed instructions; related services means developmental and other supportive services required to assist a child with a disability to benefit from special and regular education. Services included are: • Assistive technology devices and services • Audiology • Counseling services • Early identification and assessment • Medical services (for diagnosis and evaluation) • Occupational therapy • Orientation and Mobility • Physical therapy • Psychology services • Recreation • School health services • Social work services • Speech language pathology • Transportation
Service Delivery	Early intervention services and supports are to be provided in the child and family's natural environments, to the maximum extent appropriate, including home and community locations where infants and toddlers without disabilities participate. Services are developed in conjunction with the family to meet their own identified needs and priorities and are respectful of their unique culture, customs and daily routines, and are delivered in the family's native language.	In special education, to the maximum extent appropriate, children with disabilities are educated with children who are not disabled. Preschool service opportunities vary as to location and characteristics, which impacts the intensity of services and level of personnel involvement.
Transition	Transition planning begins at least six months, but preferably between 9 and 12 months prior to the child's third birthday for all children eligible under Part C or begins as soon as possible for children who are newly identified and are over age two. The process needs to include parents and personnel from the child's current, past and future setting or service providers, including representatives from the LEA, if the child is transitioning to LEA services. If a child is not eligible for Part B/preschool services, the transition team will discuss options of other appropriate services with the family.	A representative of the LEA will participate in the transition process, beginning at least six months but preferably between 9 and 12 months prior to the child's third birthday. Children transitioning into preschool services must met the state eligibility criteria. In the case of a child who may not be eligible for preschool services, the transition team will discuss options of other appropriate services with the family.

E. Developmental Norms for Speech Sound Development

Age	Vowels (Shriberg, 1993) Grunwell (1987), Hodson (1999)	Smit Norms 1990 (90% accurate)	Types of sound errors *Omissions, substitutions & distortions will be diminished as sounds are acquired (see Smit)	Age for disappearance of phonological processes (Grunwell, 1997)	Required word shapes (Shriberg, 1993)	Intelligibility	Oral Motor skills (Fletcher, 1972) Diadochokinetic rates: time required for 20 reps of single syllable (pu) 15 reps of bisyllable (pu tu) and 10 reps of /pu tu ku/
18 to 24 mo.	/p/b/m/n /w/t/d/		Omissions, substitutions & distortions	Syllable deletion	CV, CV	Intelligible for single word productions	Appropriate tongue tip placement for rest posture. Lips Closed.
3		/b, m, h, w, p/	Omissions: minimal Substitutions: may be present Distortions: may be present Atypical errors: should be absent	Final consonant deletion Consonant harmony Reduplication Context-sensitive voicing Stopping /f, s/	CV, VC, CVC, Cn_or__ (initial & final clusters, ie., **b**low, bul**b**) 2-syllable	If intelligibility rates in conversation are at a level of at least 67% accuracy, it is rated to be within normal limits.	
3½		Add /n, d, k/ S consonant Sequences (sp, sm, st, sn, sk) l, r consonant sequences (bl, br, cl, cr, pl, pr)	Omissions: should be absent; exception: /t, d/ final position may persist Substitutions: may be present Distortions: may be present Liquid sequences may be marked with w.	Stopping /v, z/ fronting		Intelligible to a familiar listener.	
4	All should be present	Add /t, g/	Omissions: absent Substitutions: may be present Distortions: may be present	Stopping for sh, ch, j Cluster reduction Weak syllable deletion	Add Cn__Cn, 3-syllable, ie., initial/final clusters in 3-syllable words		
4½	All should be present	V, ch, sh, z, ng	Omissions: absent Substitutions: may be present Distortions: may be present	Deaffrication Depalatalization		90%+intelligibile to an unfamiliar listener	
5	All should be present	Add /j/l	Omissions: absent Substitutions: may be present Distortions: may be present		Add 3+ syllable		
5½	All should be present	Add /f, v/	Omissions: absent Substitutions: may be present Distortions: may be present				
6	All should be present		Omissions: absent Substitutions: absent for all sound but /0/ and /v/ in specific words. Distortions: lateralized sibilant fricative and affricate productions typically will not self-correct without intervention. Dentalized productions may continue to self-correct	Gliding of liquids	All should be present	Intelligible to an unfamiliar listener	/pu/ = 4.8, SD = .8 /tu/ = 4.9,SD = 1.0 /ku/ = , SD = 9 /pu tu/ = 7.3, SD = 2.0 /pu/ku/ = 7.9, SD = 2.1 /tu k/ = 7.8, SD = 1.8 /pu tu ku/ = 10.3, SD = 3.1

Intelligibility Considerations

In determining intelligibility a number of factors can negatively influence intelligibility. Some of the primary but not exclusive factors that impact include: the type of sound error and the frequency with which that sound may appear in the spoken English language. For example, the consonant /t/ appears frequently and if that sound is significantly and consistently in error (omitted or substituted) then intelligibility may be more compromised. With this in mind it may be prudent to consider the profile of errors when selecting a target for remediation. Other factors include: Number of errors, type of error (omission has greater impact than substitution) inconsistency of errors, and rate of speech.

Percentage of Occurrence of English Consonants

Consonant	Rank	Percentage	Consonant	Rank	Percentage
t	1	13.7	p	13	3.9
n	2	11.7	b	14	3.5
s	3	7.1	z	15	3.0
k	4	6.0	G	16	2.5
d	5	5.8	f	17	2.4
m	6	5.6	j	18	2.2
l	7	5.6	S	19	1.5
r	8	5.2	v	20	1.2
w	9	4.8	o	21	0.9
h	10	4.2	C	22	0.7
T	11	4.1	tZ	23	0.6
g	12	4.1	Z	24	0.0

Shriberg and Kwiatkowski (1995), In Bleile, K (1995). *Manual of articulation and phonological disorders*. San Diego: Singular Publishing

Again if intelligibility is a goal then, considering the error pattern that a given child produces and analyzing the effect that these errors play in intelligibility of the child's speech productions is a prudent action to take.

Effect of Error Patterns on Intelligibility

Beginning of Word

Most to Least effect:

_____Fronting

_____Gliding

_____Initial voicing

_____Stopping

_____Cluster reduction

End of Word

Most to Least effect:

_____Final consonant deletion

_____Fronting

_____Word final devoicing

Leinonen-Davies (1998). In Bleile, K (1995). *Manual of articulation and phonological disorders*. San Diego: Singular Publishing

F. Preschool Age Fluency

Of primary importance to the identification of stuttering in young children is the separation of those children that continue to stutter versus those that may experience a spontaneous remission and those children that display normal developmental dysfluencies.

Yairi and his colleagues in a longitudinal study (Yairi et al., 1996) Compared children who experienced **spontaneous remission** with those who continued to stutter. The results indicated that children who stopped stuttering:

- Were younger
- Usually began to stutter before three years of age
- Were girls
- Had many more family members who stopped, rather than continued to stutter
- Decrease in frequency and type of stuttering like dysfluencies (SLD) within one year of onset

Those children who continued to stutter

- Were older (related to the growing awareness of the problem)
- Began stuttering after age three (passed the period of rapid language and vocabulary expansion)
- Were boys
- Had relatives whose stuttering persisted (chronic)
- Were children who continued to stutter 12 months after onset
- Had difficulties in other speech language areas
- Had negative reactions to the behavior
- Had higher frequency of part-word or single syllable word repetitions
- Multiple repetitions or longer length of a specific dysfluency
- Dysrhythmic phonation: faster speed and rate of repetition

Although this provides good prognostic information for the family and the clinician, it does not definitively determine which children will have remission and which are at risk for continuing to stutter into adulthood. Understanding the factors that may contribute to the onset, frequency and intensity of stuttering may also assist in determining those young children that need more direct service. "Genetic Factors are necessary but may not be sufficient to cause stuttering. Complex environmental factors appear to be involved as well as speech, language, motor, and personality-temperament aspects." (Yairi, E. (2004).The formative years of stuttering:a changing portrait. *Contemporary Issues in Communication Sciences and Disorders,* 31 92–104.

Communicative environment	General environment	Child factors
Rapid rate of those around the child	Busy lifestyles with lack of routine	Genetic predisposition, progress of speech, language, motor, social, cognitive development, age of onset
Frequent interruptions and simutalk. Reacting negatively to the stuttering	Frequent changes in the family, little predictability, few consistent routines.	Temperament and sensory integration issues.
Confrontational conversations or communications with heavy linguistic load. Asking multiple questions	High expectations, anxiety of parents/others, overall presence of conflict or stress. Sibling rivalry	High internal demand for rapid complex language

Adapted from Chmela 2004

Early Identification of Stuttering Like Dysfluencies (SLDs)

The incidence of children under the age of three who are diagnosed as having SLDs is difficult to determine. The incidence of preschool children (age 2 through 5) is considered to be less that 1%. With the mean age of onset being 32.76 months, a significant number of the less than 1% would be over the age of three, leaving a very small number of children under the age of three.

The first step **in early identification is to be able to make the differential diagnosis between normal developmental dysfluencies and stuttering-**

like dysfluencies (SLD). Evaluators must be able to collect a through child and family history to determine:

- The presence of stuttering among other family members
- The exact age of onset of stuttering
- The amount of time since the stuttering began
- The number of SLDs per 100 syllables demonstrated during evaluation
- Type of stuttering behavior at onset
- Changes in the behavior since onset

This information is critical to making sound decisions regarding intervention. Providing information to parents regarding stuttering and its early progression may be one way of intervening for the young child that stutters and direct services for the older child (3, 5) that demonstrates more significant SLDs. The SLP may be called on to provide indirect services to the family of the young child (3.5) with SLD. In this capacity the SLP can provide the following indirect services:

- Monitoring the change in the frequency or type of dysfluencies
- Counseling families, especially when there is a family history of stuttering
- Counseling families to evaluate and modify the verbal environment of the child
- Counseling parents about their own possible anxiety surrounding the child's stuttering

Procedure Checklist for Determination of Evaluation or Consultation for Stuttering Behaviors in the Young Child

A decision to treat a stuttering behavior in a **consultative** mode with indirect services may be made on the following criteria:

- ☐ Problem present less than 12 months
- ☐ Onset under 3.5
- ☐ Very episodic
- ☐ Female
- ☐ More normal types of dysfluency
- ☐ Child unaware
- ☐ Parents unconcerned
- ☐ No other developmental issues
- ☐ No history of stuttering in the family

A decision to move toward a full evaluation and more **direct service** intervention may be made on the following criteria:

- ☐ Problem present over 12–18 months
- ☐ Onset after 3.5
- ☐ Fairly consistent
- ☐ Male
- ☐ Part word repetitions, prolongations or blocks
- ☐ Child aware or momentarily expressing frustration
- ☐ Parents are concerned
- ☐ Other speech language issues present
- ☐ History of stuttering in the family

The following table is provided to assist the SLP in differentiating/identifying the types of stuttering behavior. Stuttering behavior that is less likely to demonstrate remission and dysfluent behavior that is frequently exhibited in the typically developing young child are categorized below.

Guidelines for Differentiating Normal from Abnormal Dysfluencies

Behavior	Stuttering	Normal/Typical Dysfluency
***Syllable repetitions*:**	***Syllable repetitions*:**	***Syllable repetitions*:**
a) Frequency per word	More than two	Less than two
b) Frequency per 100 words	More than two	Less than two
c) Tempo	Faster than normal	Normal tempo
d) Regularity	Irregular	Regular
e) Schwa vowel	Often present	Absent or rare
f) Air flow	Often interrupted	Rarely interrupted
g) Vocal tension	Often apparent	Absent
***Prolongations*:**	***Prolongations*:**	***Prolongations*:**
h) Duration	Longer than one second	Less than one second
i) Frequency	More than 1 per 100 words	Less than 1 per 100 words
j) Regularity	Uneven or interrupted	Smooth
k) Tension	Important when present	Absent
l) When voiced (sonant)	May show rise in pitch	No pitch rise
m) When unvoiced (surd)	Interrupted airflow	Airflow present
n) Termination	Sudden	Gradual
Gaps (silent pauses):	***Gaps (silent pauses):***	***Gaps (silent pauses):***
o) Within the word boundary	May be present	Absent
p) Prior to speech attempt	Usually long	Not marked
q) After the dysfluency	May be present	Usually absent
Phonation:	***Phonation:***	***Phonation:***
r) Inflections	Restricted; monotone	Normal
s) Phonatory arrest	May be present	Absent
t) Vocal fry	May be present	Usually absent
Articulating Postures:	***Articulating Postures:***	***Articulating Postures:***
u) Appropriateness	May be inappropriate	Appropriate
Reaction to Stress:	***Reaction to Stress:***	***Reaction to Stress:***
v) Type	More broken words	Normal dysfluencies
Evidence of Awareness:	***Evidence of Awareness:***	***Evidence of Awareness:***
w) Phonemic consistency	May be present	Absent
x) Frustration	May be present	Absent
y) Postponements (stallers)	May be present	Absent
z) Eye Contact	May waver	Normal

Adapted from:*Connecticut Birth to Three System.Service Guidelines #3 May 1998*

G. Pediatric Swallowing

The information is this appendix is designed to help the SLP with an overview of the complex nature of swallowing and feeding in young children. It is not to be used as instructions for implementation or intervention without the support/direction of trained professionals.

Swallowing allows us to eat and drink, and ensures adequate caloric and nutritional intake for growth and development. Swallowing difficulties in the pediatric population may be transient, as is often the case with children recovering from a head injury, or permanent, as is more commonly seen in children with congenital conditions such as cerebral palsy that influence physical and neurological development. While swallowing difficulties are more likely in children with multiple, severe disabilities, they are also seen in children with mild neurological and/or physical impairment. Complications of swallowing difficulties can include aspiration which may result in recurrent pneumonia, chronic respiratory illness, or lung disease as well as compromised nutrition which may result in failure to thrive status. Symptoms that may suggest swallow dysfunction include:

- Color changes, apnea, or bradycardia during feeding.
- A chronic history of pulmonary difficulties which may include asthma like symptoms, bronchiolitis, recurrent pneumonias, or a persistent need for supplemental oxygen.
- Neuromotor involvement that is impacting oral-motor coordination for swallowing and breathing.
- Wet vocal or respiratory quality that emerges or intensifies during feeding.
- Profuse drooling.
- The presence of food or liquid when a child with a trach is suctioned.
- Coughing, choking, or gagging while eating.

It is important to look at a constellation of symptoms when attempting to determine how safe or functional a child's swallow may be. For example, we now have research indicating that the presence or absence of a cough or gag alone is not diagnostic in identifying the presence or absence of aspiration. Similarly, interest or disinterest in eating is not in and of itself reflective of swallow dysfunction. There are children who aspirate but enjoy eating and there are children who have no problems with aspiration who demonstrate food refusal or do not enjoy eating. It is important to remember that there are many reasons for difficulties with eating and swallowing including existing medical conditions such as gastroesophageal reflux, primitive or atypical oral-motor skills, avoidance responses or maladaptive feeding behavior as a result of negative experiences with eating, or altered oral-sensory registration or processing. When evaluating swallow function we need to look beyond the presence of risk factors or aspiration to the child's general health, pulmonary status, weight, enjoyment of eating, and time spent on eating before making a determination about how safe or functional their swallow may be.

When swallowing dysfunction is suspected, the use of an Upright Modified Barium Swallow (UMBS) may be necessary. A UMBS offers us the opportunity to examine management of thin liquid, thickened liquid, puree, and/or solid food consistencies as the child is fed in their typical feeding position with familiar feeding utensils. The UMBS allows for the assessment of degree of aspiration and basis for aspiration and allows us to evaluate the effects of changes in bolus size, food consistency, taste, temperature and/or positioning on swallow safety and function. The purpose of an Upright Modified Barium Swallow Study is not only to identify aspiration or abnormality in swallow function but also to determine if the child's swallow is functional even though it may be atypical. When aspiration or an unsafe swallow is identified on an Upright Modified Barium Swallow Study, modification or withdrawal from oral feeding is often recommended. The Upright Oral Pharyngeal Swallow Study is NOT the study to choose for evaluation of gastroesophageal reflux, and similarly, an Upper GI is not the ideal study to assess swallow function. Aspiration on an Upper GI does not necessarily mean a child cannot eat by mouth as this study does not assess competency with various consis-

tencies nor does it assess a child in their typical feeding position.

Pediatric dysphagia is complex and assessment in this area needs to be conducted by individuals with the appropriate expertise. It requires knowledge about both normal and atypical development of feeding and swallowing and good awareness of new research that may influence analysis of findings from a UMBS or recommendations for treatment. Many pediatric centers have multidisciplinary teams to assess and treat swallow dysfunction. It is critical that a swallow pattern is not incorrectly characterized as unsafe in order to avoid inappropriately modifying a child's diet or withholding oral feeding. When a reduction or withdrawal in oral feeding is advised in a child we impact bonding, socialization, and communication. This is particularly true for very young children and for many of our children who are severely impaired. When even a short period of non-oral feeding is recommended there is risk of developing oral sensory defensiveness or of creating difficulty transitioning from non-oral feeding back to oral feeding. For the families of our most severely handicapped youngsters, limiting or withholding oral feeding represents a significant loss as for many of these children eating by mouth may be their only "normal" skill. For all of our families, no matter how severely or mildly involved the child, dietary modifications can prove stressful and difficult to implement.

There is a great deal we do not yet know about swallow function in children. Most of what we know about swallow function comes from research completed on adults. We have very little research on normal swallow function in children or on typical swallow function in children with specific diagnoses such as cerebral palsy. The same is true for treatment. Many of the treatment techniques described in the literature and currently used are appropriate for adults but not for children. The most effective intervention strategies for children currently remain altering consistency, bolus size, pacing of food/liquid presentation, taste, and positioning. It is important when intervening with children to consider the impact of the intervention on their emotional, social, and communication development. Because of the complex nature of pediatric dysphagia it is important to always evaluate new research and therapeutic interventions critically in terms of scientific rigor and quality.

Pediatric Feeding

The development of feeding skills in infants and young children is a complex task. A child's ability to eat safely and successfully is dependent on normal anatomy, well-coordinated muscle activity, sensory processing and a supportive feeding environment (Stevenson & Allaire, 1991). When there are concerns regarding the feeding process it is critical to consider all of these aspects in a comprehensive fashion in order to provide accurate assessment, diagnosis and treatment.

A feeding disorder often occurs in tandem with a variety of conditions that affect normal development, such as prematurity, gastroesophageal reflux, cerebral palsy, cardiac disorders, seizure disorders and other neurological problems.

A feeding problem can present in a variety of ways, including: chronic poor growth, compromised nutritional status, frequent food refusal, decreased variety and volume of oral intake, persistent gagging while eating or tube-feeding issues such as transitioning to oral feeding and maintaining oral feeding skills with a gastrostomy tube.

IDENTIFYING A PROBLEM

It is important to look at feeding and eating within the context of the child's experience, including:

- Medical history
- Developmental skills
- The family situation

The pre-existing medical or physical condition such as gastroesophageal reflux or tracheiesophageal fistula may now be resolved or corrected, but the negative impact on eating may persist:

- Avoidance responses
- Maladaptive feeding behaviors
- Over-reaction to tactile input (hands, face and mouth)
- Primitive or atypical oral motor skills
- Emotionally charged feeding atmosphere

When infants or children are struggling with eating, there is **always** a reason. The reason or reasons must be determined by examining the behaviors that the child displays and the parents' perception of the feeding problem.

Children may present with difficulties that are related to the motor coordination necessary for eating:

- Inability to shift food within the mouth or difficulty organizing the food bolus and moving it to the back of the mouth for swallowing
- Inability to chew thoroughly, resulting in choking on solids or swallowing foods whole
- Tongue thrusting, resulting in loss of food from mouth
- Poor coordination of suck-swallow-breath processes

These motor-based difficulties may be easily observed, and the need for treatment may therefore be more obvious.

Difficulties that are based in sensory registration or processing can be less obvious or well defined:

- Persistent gagging behavior
- "picky" eater or strong preference for foods based on taste or texture
- narrow range of food in diet
- difficulty transitioning to a more advanced diet
- inability to touch or handle foods for self feeding
- pocketing food or keeping food prolongedly in the mouth
- poor ability to attend to eating or to stay at the table during mealtimes
- minimal interest in food or eating, with low volume of intake
- prolonged dependence on tube feedings with resultant oral defensiveness

Often, there is a combination of factors at play, and children can learn how ***not*** to eat when there issues of fear, pain or discomfort. It is important to be alert to risk factors which may lead to a feeding disturbance, such as medical conditions (gastroesophageal reflux, allergies, surgeries) and developmental issues (delayed introduction to solids, hypersensitive gag response, lack of experience). Refusal of age appropriate tastes or textures may be a subtle indication of motor or sensory dysfunction, which warrants further investigation (Palmer & Heyman, 1993).

Pediatric feeding difficulties can be complex. Assessment and treatment in this area should be conducted by individuals with appropriate expertise. Best practice often includes contributions from Speech Language Pathologists, Occupational Therapists, Physical Therapists, Dieticians and physicians, and caregivers. Many pediatric centers have multidisciplinary teams to assess and treat feeding disorders.